

DEMAND FOR MEDIUM FIBER COTTON VARIETY PORLO K-1 FOR WATER AND MINERAL FERTILIZERS

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ANNOTATION

This article highlights the influence of the irrigation regime of the norms of mineral fertilizers on the weight of raw cotton in one box and the yield of cotton of the Prolok-1 variety cultivated in light sierozem soils of the Surkhandarya region.

INTRODUCTION

At present, one of the main tasks in cotton growing is the creation, placement, introduction into production of cotton varieties corresponding to the soil and climatic conditions of the area. Scientific specialists and breeders carry out scientific research and achieve high achievements in the creation of early, high-yielding varieties of cotton that meet the requirements of the market, resistant to diseases and pests, soil salinity, water deficiency, high air temperatures, garmsel, especially resistant to relative humidity.

Therefore, it is necessary to conduct separate experiments to obtain a high and quality crop, it is also necessary to develop schemes of agrotechnical measures corresponding to light gray soils and regions of the steppe zone, choosing early-ripening varieties of cotton in each region, bearing in mind the soil-climatic, reclamation, hydrogeological conditions of the area, wide introduction into production is an urgent problem facing cotton science and awaiting its solution.

AT for a positive decision above of these tasks in the conditions of medium loamy light sierozem nights in the Bandikhan district of the Surkhandarya region during 2016-2018, studies were carried out to develop optimal agrotechnologies for the cultivation of the medium fiber cotton variety Porlok -1.

RESEARCH METHODS

Scientific research work was carried out during 2016-2018 in the conditions of light gray soils with low fertility with a groundwater level of 1.5-2.0 meters at the Bektepa MERSAZH farm in the Bandikhan district of the Surkhandarya region.

In research, based on the degree of soil fertility, two norms of mineral fertilizers N_{150} , P_{105} , K_{75} kg/ha and N_{200} , P_{140} , K_{100} kg/ha, two irrigation regimes 65-65-65% and 70-75 -65% of FPV.

RESEARCH RESULTS

During the research, changes in the agrophysical abilities of the soil during the growing season were studied, where the volumetric mass under conditions of light gray soils at the beginning

of the growing season in the arable (0-30 cm) soil layer was 1.31-1.32 g/cm³, in the sub-surface (30-50 cm) layer 1.34-1.34 g / cm³, in the 0-70 cm layer 1.36-1.37 g/cm³, in the 0-100 cm layer 1.37-1.38 g/cm³, at the end of the growing season on variants with an irrigation regime 65-65-65% of PPV this indicator in the arable (0-30 cm) layer increased by 0.04 g / cm³, in the subarable (30-50 cm) layer by 0.05 g / cm³, in the 0-70 cm layer by 0.05 g / cm³, in the 07-100 cm layer by 0.04 g/cm³, and on variants using the irrigation regime of 0-75-65% of the FPV, it increased in the arable (0-30 cm) layer by 0.04 g / cm³, in the 30-50 cm layer by 0.06 g/cm³, in the 0-70 cm layer by 0.05 g/cm³, in the 0-100 cm layer by 0.04 g/cm³.

The volumetric mass at the end of the growing season in the arable and subsoil layers of the soil when irrigated with an irrigation regime of 70-75-65% of the FPV differs by 0.01 g/cm³ compared with an irrigation regime of 65-65-65% of the FPV. As a result of the analysis of the data of the studies carried out in the conditions of low-fertile light gray soils of the Bandikhan district of the Surkhandarya region, a significant difference in the bulk density of the soil at the end of the growing season was revealed due to agrotechnical measures.

When conducting research on the water permeability of the soil at the beginning of the growing season in 2017, it was revealed that it was 325 m³ / ha in the first hour of observation, and 720 m³ / ha in the period of six hours. At the end of the growing season, with an irrigation regime of 65-65-65% of the LWL, the water permeability decreased by 108 m³ / ha, and with a regime of 70-75-65% of the LWL, by 147 m³ / ha, compared with the beginning of the growing season. In the studies carried out, an increase in the bulk density and a decrease in the water permeability of the soil as a result of an increase in the irrigation regime from 65-65-65% to 70-75-65% of the LWL are observed.

When cultivating the medium-fiber cotton variety Porlock-1 with an irrigation regime of 65-65-65% of the FPV, 2 irrigations were carried out according to the 0-2-0 scheme, where the irrigation rate was 2120 m³ / ha, and when filling with an irrigation regime of 70-75-65%, 3 irrigation schemes 0-2-1 with an irrigation rate of 2680 m³ / ha.

In the experiments carried out in conditions of light sierozem soils with deep groundwater in the Surkhandarya region, the weight of raw cotton in one box of the Porlok-1 cotton variety with irrigation with an irrigation regime of 65-65-65% of the FPV and the application of mineral fertilizers with a norm of N₁₅₀, P₁₀₅, K₇₅ kg/ha and N₂₀₀, P₁₄₀, K₁₀₀ kg/ha amounted to 5.0-5.2 g, and under the irrigation regime 70-75-65% of the PPV with the use of the above mineral fertilizer norms, this indicator was equal to 5.3-5.5 g. When conducting phenological observations on the growth and development of plants when irrigating with an irrigation regime of 65-65-65% of the FPV with the application of mineral fertilizers with the norms N₁₅₀, P₁₀₅, K₇₅ kg/ha and N₂₀₀, P₁₄₀, K₁₀₀ kg/ha plant height at the beginning of September was 109.5 and 114.5 cm, respectively, the number of sympodial branches was 13.0 and 14.5 cm, the number of bolls was 7.3 and 8.3 pieces.

When carrying out irrigation with an irrigation regime of 70-75-65% of the FPV growth, the development of cotton, respectively, with mineral fertilizer was higher by 6.8 and 9.4 cm, the number of sympodial branches by 1.6 and 1.1 pieces, the number of bolls by 0, 3 and 0.5 pieces compared to the irrigation regime of 65-65-65% of the FPV.

Influence of irrigation and nutrition regime on the weight of raw cotton in one box and cotton yield.

No.	Norm of mineral fertilizers, kg/ha			Weight of raw cotton on one box, g. 2017			Productivity by years, c/ha (2016-2018)			
	N	P	K	1st collection	2nd collection	average	2016	2017	2018	average
At pre-irrigation soil moisture 65-65-65% of the PPV										
one	150	105	75	5.7	4.3	5.0	2 5.4	2 7.6	2 4.6	2 5.9
2	200	140	100	5.9	4.4	5.2	2 9.6	33.3	2 8.7	30.5
At pre-irrigation soil moisture 70-75-65% of the PPV										
3	150	105	75	6.0	4.6	5.3	2 6.6	2 8.6	25, 9	2 7.0
four	200	140	100	6.2	4.8	5,5	31,1	34,7	30,1	32,0

In studies carried out in conditions of light gray soils with deep groundwater 1.5-2.0 of the Surkhandarya region, when irrigating with an irrigation regime of 65-65-65% of the PWL of cotton variety Porlok-1 with the use of mineral fertilizers with a norm of N₁₅₀, P₁₀₅, K₇₅ kg/ha, the yield was 27.6 c/ha, and when using the norm of mineral fertilizers N₂₀₀, P₁₄₀, K₁₀₀ kg/ha 33.3 c/ha, the additional yield due to fertilizers amounted to 5.7 c / ha.

When irrigating with an irrigation regime of 70-75-65% of the FPV with the use of mineral fertilizers with the norm N₁₅₀, P₁₀₅, K₇₅ kg/ha and N₂₀₀, P₁₄₀, K₁₀₀ kg/ha, the yield of raw cotton, respectively, amounted to 28.6 and 34.7 q/ha, where, when irrigated with an irrigation regime of 70-75-65% of the LWF, the yield was 1.0-1.3 q/ha more compared to the irrigation regime of 65-65-60% of the LWL.

CONCLUSIONS

Based on the results of the research, it can be concluded that when cultivating the medium-fiber variety Porlok-1 in the conditions of light gray soils of the Surkhandarya region, irrigation with an irrigation regime of 70-75-65% of the FPV with the application of mineral fertilizers at the rate of N₂₀₀, P₁₄₀, K₁₀₀ kg / ha ensured the yield of raw cotton in the amount of 34.7 centners/ha or an additional yield of 1.4 centners/ha was obtained compared to the irrigation regime of 65-65-65% of the IWL.

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