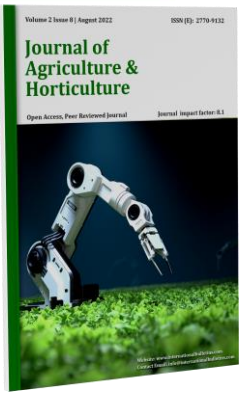

CHARACTERISTICS OF THE COTTON ROOT SYSTEM AND THE EFFECT OF ITS NODULES ON SHEDDING

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It has been studied by many scientists that the level of growth, development and productivity of a plant depends on the root system, which is one of its main members. Therefore, it was determined that it is important to study the specific characteristics of the development of the root system, as well as the thickness of seedlings of medium and thin fiber cotton varieties, water and nutrition standards, irrigation procedures.

The spread of the root system and the depth of wetting of the soil vary depending on the soil level. However, when determining the norms of irrigation of irrigated barren soils with a mechanical composition of light-medium sand, prone to salinity, it is necessary to take into account the need to wash away excess salts in the root layer by creating an optimal water-nutrition regime at each irrigation. It was determined that this is achieved as a result of the use of increased standards of irrigation.

Soil moisture before watering determines not only the surface part of the plant, but also the development of the root system. According to them, the different humidity of the soil also ensures the spread of the roots towards the pit.

Mauer F. I. determined that small rhizomes in the root system develop vigorously only when there is sufficient moisture. He writes that it is necessary to "pull" the first water before the flowering of cotton, which is considered a preparatory period, to focus all efforts on creating a strong root system, and to prevent the above-ground part of the plant from rotting.

Different irrigation regimes have a significant effect on the growth and development of roots of alfalfa, corn, and shedding of crop nodes in cotton.

In meadow and meadow-swamp soils, the roots of cotton stop at the level of the soil, and they are half, one-third, or even shorter than the roots of cotton in gray soils.

According to S.N Rijov, it was observed that the main part of the cotton root is located around one meter of the soil. In July and August, the plant takes water for transpiration from a depth of 30-90 cm, so it was observed that the irrigation rate should be from 325 m3/ha to 1200 m3/ha.

Before starting work in the experimental field, the morphological structure of the soil was defined by genetic layers. For this, a pit was dug up to the level of the zahab. The mechanical composition of the soil was determined by the pipette method using sodium hexamethophosphate (according to N.A.Kachinsky), the micro-aggregate composition was also performed by the pipette method (according to Pavlov). These analyzes were performed on soil samples obtained by genetic strata.

The volume weight of the soil is measured using a steel cylinder with a height of 10 cm and a diameter of 7.15 cm, using the method of cutting cylinders as a general background at 3-4 points of the field, along the diagonal of the experimental field, every 0-10 cm to the soil

level and 0-100 cm from the depth of 0- It was determined at a depth of 70 and 0-100 cm. Total soil porosity was calculated from volume and specific gravity data.

Table 1

Options	Soil moisture before irrigation, %	Seedling thickness, thousands of bushels/ha	Standards of mineral fertilizers (NPK), kg/ha			Varieties of cotton
			N	P	K	2010-2012
1	60-65-65	80	160	130	80	Sultan
2	60-65-65	80	190	140	100	
3	70-75-60	80	160	130	80	
4	70-75-60	80	190	140	100	
5	60-65-65	100	160	130	80	
6	60-65-65	100	190	140	100	
7	70-75-60	100	160	130	80	
8	70-75-60	100	190	140	100	

The water permeability of the soil was determined by the ram method at the beginning of the operational period from 3-4 points of the field in the initial state, at the end of the operational period in all variants of the experiment.

Table 2

A system of field experiments

Options	Soil moisture before irrigation, %	Seedling thickness, thousands of bushels/ha	Standards of mineral fertilizers (NPK), kg/ha			Varieties of cotton
			N	P	K	
1	65-65-60	80	200	150	100	Besh kahramon
2	65-65-60	80	200	150	100	
3	65-65-60	80	250	175	100	
4	65-65-60	80	250	175	100	
5	70-70-60	100	200	150	100	
6	70-70-60	100	200	150	100	
7	70-70-60	100	250	175	100	
8	70-70-60	100	250	175	100	

The limited field moisture capacity of the soil was determined by the field method (according to Rozov) at two points of the experimental field in spring. Soil moisture was determined from every 0-10 cm layer to a depth of 0-100 cm in 4-5 replicates at each site. Soil moisture was determined by drying the samples in aluminum cups at a constant temperature of 105 degrees for 6-7 hours.

The content of humus, total nitrogen, total phosphorus and potassium from three points on the diagonal of the experimental field 0-100 cm. every 0-10 cm in depth. was analyzed on soil samples taken from Humus was determined by Turin's method, total nitrogen by Keldahl's method, total phosphorus by Lorentz's method, and total potassium by Smith's method.

The amount of salts in the soil is every 0-10 cm in the spring from three points with a common background on the experimental field diagonal. were analyzed on the basis of soil samples taken from the layer to the surface of soil, taken from the same depth in autumn in all options. Sediment samples were taken from monitoring wells and their salt content (dry residue, chlorine ion) was analyzed. For each option, the water consumption "Chipolletti" 25 cm and 50 cm wide water meters were used.

The development characteristics of the root system of cotton varieties were dug up every two to three years, drawn on millimeter paper and photographed.

The starting dates of the main development stages of the studied cotton varieties (50%) were determined in all returns in each variant and the accumulation of dry mass in the following periods: at the emergence of 3-4 leaves, at the time of budding, flowering and at the end of the period of operation, phenological observations on the growth, development and harvesting of cotton varieties carried out in all variants. For this purpose, paper labels were hung on 50 plants from three permanent plots (17 at the beginning, 17 from the middle, and 16 from the end) in each variant. Seedling thickness was determined by completely counting the plants in the counting rows of the variants in front of the harvester in all variants. The weight of cotton in one bag was calculated by picking the cotton when all the bags were opened before each harvest in the counting rows. The technological properties of the fiber were determined in the cotton fiber laboratory of UzPITI Surkhondarya branch. The cotton fiber laboratory of the Zaytsev Scientific Research Institute of Cotton Breeding and Seed Breeding of Uzbekistan and the cotton fiber laboratory of the Termiz Cotton Refinery, and the oiliness of the seed was determined in the laboratories of the Denov oil plant in Surkhondarya region. Obtained yield data according to V.P. Peregudov and A.B. Sokolov, mathematical processing was performed according to the method of mathematical dispersion analysis.

As a result of the research, it became clear that it was not difficult to distinguish between the roots depending on the seedling thickness and water-nutrition standards and the watering procedure, because in our variants with a thick seedling, the roots were compressed and thinned and did not go very deep. In the two cotton varieties tested in -60% variants, it was observed that the roots went deep, the lateral roots were few, reaching a depth of 110 cm.

As a result of the conducted research, it became known that if the level of soil moisture before irrigation is kept at 70-70-60, NRK 200-250; 150-175; When 100-125 kg/ha is given, when the thickness of the seedling is around 80-90, the root system is strong in the plant, the above-ground part of the cotton is well developed, and the final result is high.

CONCLUSIONS

Changes in water-physical properties of the soil were observed if the pre-irrigation soil moisture and the number of irrigations were increased in medium fiber cotton varieties with different maturity. It was observed that with the increase of application water and seasonal irrigation standards, the volume weight of the soil and water permeability increased at the end of the application period.

During the comparative analysis of drip irrigation, it was observed that the thin-fiber cotton Termiz-32, the first type variety, has a positive effect on soil agrophysics, i.e., the determination of the optimal water regime, in the conditions of barren soils with a groundwater level of 172 cm in the southern region of our republic, Surkhan-Sherabad Valley.

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