

THE IMPORTANCE OF WATER IN OBTAINING ABUNDANT AND HIGH-
QUALITY CROPS IN THE SOUTHERN FERGANA REGION

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Abstract: *The degree of tillage and soil fertility have a great influence on the irrigation regime. The more fertile the land, the greater the yield, which means that the total amount of water used during the growing season (irrigation rate) for cotton cultivation will also be greater. But in this case, the relative consumption of water to produce the weight of the product (for example, each centner of cotton) is always small.*

Key words: *soil, water, moisture, wilting, recovery, porosity, hydromorph, nutrition*

In order to obtain abundant and high-quality crops from crops, it is necessary to pay attention to the accumulation of sufficient water in the soil.

It is known that due to the fact that Uzbekistan is located in a rather dry zone in terms of climate, the amount of annual precipitation is very low, therefore, the natural moisture in the soil is not enough to get the desired harvest from cultivated crops.

Consequently, high yields of cotton and other types of crops are mainly carried out by irrigation. In irrigated lands, it is impossible to create a variety of soil moisture that meets the needs of plants. The moisture regime created by irrigation is called the irrigation water regime.

Cotton, like all plants, needs adequate moisture at all times for a high yield. If there is a lack of moisture in the soil, the passage of water to the plant slows down, the activity of physiological processes in it decreases, and the yield of cotton significantly decreases.

In order to ensure optimal soil moisture during the cotton growing period, it is necessary to determine the maximum moisture before watering.

This humidity should not affect the yield of cotton and should correspond to the lower limit of the optimal humidity in the soil. The upper limit of optimal humidity is determined by the moisture capacity of the soil.

Some scientists consider the lower limit of optimal moisture to be equal to the wilting moisture of the plant. S. N. Rizhov (1948) proved in practice the inaccuracy of this theory, which is related to the determination of water norms for irrigation time.

He determined that the upper limit of optimal humidity is equal to 70-75% of the moisture capacity of the soil field.

Soil moisture in the 0-100 cm layer before irrigation is 70-75% less or more than the field moisture capacity, regardless of various agrotechnical measures, whether the soil is saline or not, soil fertility and other means. cannot be p.

One of the most important factors for obtaining a high yield is determining the number of irrigations during the cotton growth period depending on the period of seeding.

When there is enough moisture and heat in the soil, the seed begins to germinate after 8-10 days. If there is not enough moisture, the germination of the seed will be delayed. This causes the seedlings to grow unevenly and the cotton to develop unevenly. According to the information of S. N. Rizhov, the upper limit of moisture required for full and high-quality seed germination is 70% of the moisture in the soil compared to the field moisture capacity. When the humidity is less than this, the soil's water-holding capacity increases, as a result, the flow of moisture to the seeds and roots slows down.

The minimum amount of moisture required for full seed germination varies depending on the composition of the soil.

As a result of the observations, it was found that if the soil moisture decreases from the above level, the germination of the seed will be delayed. At such times, cotton can be recovered by providing seed water.

The period of the first watering of cotton should be determined depending on the amount of moisture in the soil and the condition of the plant.

Applying the first water before or after the norm has a negative effect on cotton productivity.

Timely watering of cotton before flowering accelerates its growth, development and opening of buds.

That is why it is important to determine the optimal period of the first watering. Dehydration of cotton during this period slows down plant growth and development, affects late harvest and product quality. In the pre-flowering period, excessive watering leads to compaction and cooling of the soil, weak and slow development of seedlings.

The total amount of water used by the crop in a cotton field (not including the water used in the root layer) consists of water used by the plant and water evaporated from the soil. If we take the total water consumption of the field as 100%, then 60-80% of it is consumed by plants, and the remaining 20-40% evaporates from the soil. The better the soil is cultivated, the higher the quality of agrotechnical activities, the less water evaporates from the soil, and the plant uses it very well.

During the growing period of cotton, the daily water consumption of the fields is different. Water consumption is low at the beginning, and then increases, usually cotton consumes the most water during the period when the boll ends. Later, the amount of water used in the field will be much reduced.

For example, the average amount of water consumed by a cotton field per day when the yield per hectare is 30-35 s in typical gray soils with deep seepage water: if it is 18-20 m³ during cotton picking, 50-55 m³ when flowering, 85-90 m³ when the crop is ripening, 45-50 m³ when the crop starts to ripen, 25-30 m³ when it is fully ripe.

This regularity in changes in the amount of water consumption in cotton fields is also noted in different soil climates and land reclamation conditions.

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