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PROSPECTS FOR SHADOW GROWTH THROUGH WATER SUPPLY IRRIGATION TECHNOLOGIES

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Annotation. *This article is scientifically based on the effects of water-saving irrigation technologies on the growth and development of soybeans in the irrigation of soybeans as the main crop in the irrigated areas of Bukhara region.*
Keywords. *Irrigation, water saving, irrigation norms, irrigation regime, evotranspiration, gross yield.*

To increase the production of soybeans in the world, increase productivity and efficient use of land, the norms, timing and methods of application of mineral fertilizers for high-yielding varieties, the use of effective crop rotation systems. Research institutes and higher education institutions are conducting research on the practice of irrigated agriculture in the world. Therefore, in the effective use of land in different soil and climatic conditions of the country in the conditions of saline soils prone to the selection of high-quality varieties with the use of elements of water-based irrigation technology, scientific research is relevant.

In our country, the technology of drip irrigation is widely introduced in the cultivation of agricultural crops with the help of flexible pipes. As a result, productivity is being increased due to the conservation of irrigation water, the improvement of land reclamation, the improvement of arable lands near groundwater levels, and the reduction of arable lands near groundwater levels.

In paragraph 3.3 of the Action Strategy for the further development of the Republic of Uzbekistan for 2017-2021, "..application of intensive methods in agricultural production, first of all, modern water and resource-saving agro-technologies" is one of the main tasks defined. In this regard, it is important to conduct research on water conservation and land reclamation through the elements of water-saving irrigation technology in the irrigation of soybean varieties. In the meadow-alluvial, saline and saline soils of Bukhara region.

Field experiments on elements of water-saving irrigation technology in the order of 70-70-60% of Uzbek-6 varieties in relation to BFWC field studies were conducted in 2019-2021 on mechanically compacted soils.

According to the experimental system, field experiments were carried out in 10 variants and 3 returns. The dimensions of the sections are as follows: length of the edge L = 100 m, distance between the edges 0.6 m rows, number 8, of which 4 are calculated rows, the rest are protective rows, in which case the area of one option is 8x0.6x100 = 480 m2, total experimental area 4800x3 = 1.44 ha and experimental system diagram. Soybeans, like other agricultural crops, use the

amount of water assimilated during the growing season mainly for physiological processes in the plant (photosynthesis, transpiration, assimilation, etc.) and for the formation of nutrient solutions in the soil. It provides growth, development and yield formation and ripening. The water in plants moves mainly in a liquid state in the cells and in a gaseous (vapor) space between the cells. Depending on the type of plant, the cells store up to 70-90% water. When there is a lack of water in the cells of plants, they lose their "Tugor" state. The movement of water in the organs of plants absorbs moisture from the soil through the roots, moves through the stems and leaves, and does not evaporate into the atmosphere.

Water absorption during the growth and development of plants depends mainly on the climatic, soil, hydrogeological conditions of the region, the biological characteristics of the plant, the growth phases of crop varieties, seedling thickness, crop care agrotechnologies, irrigation depends on feeding them with fertilizers. Therefore, in 2019-2021, the shadows studied in the experimental fields will be medium-ripe "Nafis" and late-ripe "Uzbek-6".

Moisture reserve in the soil in determining the daily water consumption of the elements of irrigation technology and irrigation depending on the phases of irrigation and the amount of water used for irrigation was determined by the period of formation and ripening of soybean varieties from germination to flowering, from flowering to flowering.

According to the photos, the daily water consumption of mid-ripening “Nafis” and late-ripening “Uzbek-6” varieties of soybeans varied depending on their growth phases.

In the initial growth phase of soybean varieties, ie from seed germination to mating, the daily water consumption was 13.8-15.3 m^3 / day, during which the daily water consumption was low due to the root system of the varieties and the surface. due to insufficient development of the organs. Daily water consumption increased to 58.2-63.7 m^3 / day during the periods of shading and flowering of soybean varieties.

Flowering, legume formation was 73.3-82.4 m^3 / day, and during ripening - 58.5-65.3 m^3 / day.

Irrigation method (control) adopted in the production conditions of relatively high daily water consumption of all shade varieties studied in the experimental field is recorded in option 1, 15.1-82.4 m^3 / day, relatively low daily water consumption from irrigation The previous soil moisture is 70-70-60 percent relative to the BFWC (Boundary field moisture capacity), observed in the option of irrigation with a black film coating on the edge, 14.8-74.1 m^3 / day.

Transpiration is the process by which water evaporates through the surface organs of plants. During the transpiration of plants, KA Timiryazev absorbs water from the soil and dissolved substances in it and transfers them to the organs. It is also noted that transpiration reduces the temperature of the leaves of plants, the

cells are in a stable state, the colloidal substances in the protoplasm are regularly regulated, creating good conditions for assimilation-dissimilation processes.
Therefore, each agricultural crop species and varieties have different soil-climatic, hydrogeological conditions, transpiration productivity (at a certain water consumption of the plant, the formed organic matter) and transpiration coefficient (1 g of dry matter). The amount of water used for) is an important issue to study.

In determining the transpiration productivity of mid-ripening varieties "Nafis" and late-ripening "Uzbek-6" in 2019-2021, the transpiration coefficient of the crop grown by varieties in relation to soil moisture and water consumption before irrigation while the water consumed during the season was determined by the ratio of the crop grown.

When studying the effect of aquifer irrigation technology on irrigation of soybean varieties on grain yield and dry mass of the plant, in the 1st variant of soybean irrigation (control) the transpiration productivity relative to grain yield was 0.479 kg / m^3, o If the transpiration efficiency of the dry mass of the wire was 5.3 kg / m^3, in the 2nd option irrigated with a black film covering the shade, 0.512 and 6.4 kg / m3, respectively, or 0.033 compared to the control option. and a high of 1.1 kg / m^3 was observed.

When comparing the effect of soybean varieties studied in the experimental field on grain yield and transpiration productivity of dry plant mass, late-ripening variety “Uzbek-6” is 0.006 and 0.2 kg / m^3 lower than middle-ripening variety “Nafis”. It was determined that

When studying the transpiration coefficient per unit of grain yield of soybean varieties studied in the experimental field and the transpiration rate relative to the dry mass of the plant, the highest value was 0.29 g / cm^3.min in the 1st variant of irrigation (control). In the second case, when the shade was covered with a black film, it was found to be -0.22 g / cm^3.min or 0.07 g / cm^3.min lower than in the control option, similar data were obtained. It was also observed in the Uzbek-6 variety.

So, based on the above, transpiration of medium-ripening shade "Nafis" and late-ripening varieties "Uzbek-6" with a black film, pre-irrigation soil moisture 70-70-60% of the grain yield per unit of BFWC coefficient and transpiration coefficient relative to the dry mass of the plant and transpiration intensity were observed to be good.

According to the biology of the soybean plant, it is a heat-loving, moisture-loving plant. According to H.H. Atabaeva, D.Yo. Yormatova, in order for soybean varieties to germinate, it is recommended that the moisture content of 100-150% of their weight and the temperature in a 10 cm layer of soil should not exceed 12-14 ° C. It is noted that in the above-mentioned humidity and temperature, soybean varieties germinate in 7-10 days. In conclusion, the following can be cited:

Water-saving irrigation technologies have had a positive impact on the

water-physical properties of the soil in the irrigation of soybean varieties grown in irrigated meadow-alluvial soils of Bukhara region.

It was observed that with the introduction of water-saving irrigation technologies in the irrigation of both “Nafis” and “Uzbek-6” varieties of soybeans, the yield was higher than the control option.

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