ANALYSIS OF CONDUCTED RESEARCHES ON IMPROVEMENT OF DRIP IRRIGATION SYSTEM

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Annotation: *This article deals with drip irrigation and its importance, works on drip irrigation, researches conducted by scientists in our republic and abroad on improvement of drip irrigation system and their importance today.*

Studies aimed at improving modern resource-saving crop irrigation technologies are conducted in the advanced research and higher education institutions of the world, including the U.S. Department of Agriculture (USA), the University of Cordoba (Spain), Kirov St., Russia. Petersburg State Research Center (Russia), Israel State Research Center (Israel), Central Cotton Research Institute (India), ISMITI and PSUEAITI (Uzbekistan) were and are being conducted with a large number of photos.

In scientific studies conducted in developed countries of the world to improve economical methods of crop irrigation, the drip irrigation method resulted in saving twice the seasonal water consumption (U.S. Department of Agriculture, USA).

Plant uptake of soil nutrients was high when drip irrigation method was used (University of Cordoba, Spain).

When irrigation water is activated, biochemical processes in plants are accelerated (Kirov St. Petersburg State Research Center, Russia).

The technology of using nitrogen fertilizers under drip irrigation has been developed (State Research Center of Israel) and the effect of mineral fertilizers on soil amelioration in drip irrigation system has been widely studied (Central Cotton Research Institute, India).

Cost-effective irrigation technologies for new and promising cotton varieties have been developed: film irrigation, irrigation through flexible pipes, discrete irrigation, drip irrigation and sprinkling technologies.

Today, a large amount of research work is carried out all over the world taking into account the priority directions of irrigation methods use. Drip irrigation is water and resource efficient, drip and rain irrigation on soils with different levels of salinity is used to determine measures to prevent soil salinization, reduce the cost of implementation and operation of drip irrigation system, various scientific studies are conducted. Improvement of drip irrigation technology elements in accordance with

varieties and soil-climatic conditions. One of the most urgent tasks is to conduct research on wide implementation of cotton drip irrigation technology on cotton field.

For this purpose, extensive work on improvement of modern irrigation methods is carried out in advanced foreign countries.

According to information provided by U. Or, considering the water shortage in the State of Israel, water-saving use started 50 years ago, and nowadays modern water-saving drip irrigation method has increased more than 100,000 hectares. Of these, more than 40,000 ha are used for technical crops. Under drip irrigation it was possible to increase the quantity and quality of crop yields, maintain the seasonal irrigation rate, and save 20-25% of water applied to 1 ha. It was noted that drip irrigation method saves 43% of water compared to cotton irrigation. Under drip irrigation, cotton yield increased by 22.5 cwt/h.

Physiological processes occurring in cotton plants under water deficit conditions, as well as patterns of growth and development, biomass reduction, and the occurrence of photosynthesis decreases due to impaired aeration of the root system under heavy irrigation of plants. Zhang Xin-zhu and Xianglun defined by Dailar.

With this in mind, Reinders F. B. proved the principles of the advantages of irrigating cotton in small quantities but frequently, as compared with using small amounts of water and expending large quantities of water.

A number of scientists have given scientific conclusions on the use of drip irrigation in crop cultivation for rational and efficient utilization of fresh water resources in Uzbekistan.

For example, Novikov A.V. and Muradov O.M. According to the opinion of A.V. Novikov and O.M. Muradov, the optimal moisture of capillary pores in the care of cotton creates the soil for obtaining the planned yield from it, and irrigation water is 50-55% more, and the yield is 25-26% more, it is noted that the quality of yield is also high.

In the research of M.M. Sarimsakov at drip irrigation of cotton crop 3.06-3.49 tons of cotton per hectare were obtained, in comparison with the control the increase in cotton yield was 0.21-0.40 tons. He carried out irrigation works 8-9 times to achieve the result. Irrigation was carried out once or twice before flowering, five times during flowering and twice during ripening. It is concluded that the norm of seasonal irrigation is given in the range of 2800-3200 m3 per hectare.

According to the instructions of Bezborodov G.A., Komilov B., Esonbekov M. under 5-6-fold irrigation of cotton on the ground per vegetation period the water consumption is 5673 m3 per hectare, under 7-fold drip irrigation and under irrigation - 3663 m3 . In total, 1810 m3 (31.9%) of water was saved per hectare.

According to the definition of Mamatov S.A., based on many years of experiments conducted in field conditions, taking into account the water requirements of the crop grown in drip irrigation technology, it is based on the timely supply of the root layer of the crop with nutrients. As well as water absorption into the soil under drip irrigation

is reduced and concluded that due to the fact that the soil is not thrown from the end, the amount of water supplied to the crop will be reduced by 50-60% compared to. method of irrigating the land.

According to the results of scientific research conducted by B. F. Kambarov (in Samarkand and Surkhandarya provinces), seasonal irrigation is 2744-3497 with drip irrigation at moisture content of 70-70-60 percent relative to the threshold moisture content in cotton cultivation. m3/ha. Using this method, a higher yield of 1.5-3.6 cwt of cotton per hectare was achieved compared to the method of surface irrigation.

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