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ECONOMIC EFFECT OF DRIP IRRIGATION OF COTTON IN SALINE SOILS OF KHORAZM REGION

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Annotation:
This article aims to determine the economic efficiency of water-saving resource-saving technology drip irrigation method in the conditions of saline soil of Khorezm region

Key words: Resource-efficient technology, irrigation methods, drip irrigation, irrigation rate, water saving, economic efficiency.

Introduction

It is urgent to improve the reclamation condition of the saline soils of the Khorezm region, to prevent the process of re-salination and to obtain a high-quality crop from cotton. As water resources are decreasing year by year, the need for fresh water resources is increasing day by day. Effective and rational use of water requires wide implementation of modern innovative technologies in the field. It is urgent to ensure a high yield at a low cost using water-saving methods and technologies in the cultivation of cotton raw materials. In order to eliminate the above shortcomings and to achieve a high yield using innovative water-saving technologies, the President of the Republic of Uzbekistan dated December 27, 2018 on the creation of favorable conditions for the wide use of drip irrigation technologies in the cultivation of cotton raw materials. adopted decision No. 4087 on non-compliance measures. [1]. Drip irrigation not only prevents wastage of irrigation water compared to drip irrigation, but also increases cotton yield by 7-9%. [6]. As a result of the use of drip irrigation, it is possible to obtain a high yield with less effort and increase the level of economic efficiency. [3]. According to the results of scientific research, the amount of water supplied to the field can be saved by 20% and the yield of agricultural crops can be increased by 25% by using drip irrigation [5].

The use of drip irrigation method allows economical and efficient use of water, increases the productivity of agricultural crops, allows to mix mineral fertilizers and developmental substances, herbicides with water, and increases the cotton yield by an additional 4-5 100kg/he. crops are grown. [2]. Due to the systematic introduction of drip irrigation, 1978 m3/ha of water was used less per hectare compared to the above-ground irrigation method, water consumption was saved by 43.0%, cotton yield was 3.35 100kg/he or 8.3% [4]. In the current Khorezm region, the main method is irrigation of cotton (over the ground). The technology of cotton in this way, along with excessive water consumption, manpower, and material costs, cannot ensure

water distribution in the irrigated fields and uniform moistening of the soil layer where the root system is located, and it leads to uneven development of plants in the field. In the current water shortage, we have introduced water-saving technologies during the growing season of cotton, and we have aimed to use drip irrigation technology in order to obtain abundant and high-quality crops at low cost.

In order to study the effectiveness of drip irrigation technology, field experiments on drip irrigation technology were carried out on 4 hectares of cotton (over the ground) and 10 hectares of the "Diorbek Jumanyozov" farm in Khanka district. was carried out. The field of the experiment was carried out in the conditions of heavy sand, the depth of underground seepage water level is 0.85-0.90 cm, medium salinity soil, which has been planted and irrigated for a long time. Khorezm-127 cotton seeds were planted in both experimental fields in a 60x20-1 cm scheme. The experiment was carried out in 2 variants with 3 returns. All calculations, observations and analyzes were carried out on the basis of the 2007 "Methods of Conducting Field Experiments" adopted at UzPITI. Before irrigation, the soil moisture indicator was determined with a tensiometer device, and irrigation was carried out by determining the irrigation periods and standards. The level of groundwater was monitored based on the data obtained from existing wells. Irrigation started at the same time in both experimental fields. The number of irrigations on the surface irrigated area is 5 times, the interval between irrigations is 15, 15, 13, 18 days, 4600 m3/he per hectare, 12 times per irrigation. the volume was 218.6 m3/he and 2622 m3/he in the season, the irrigation interval was 6;6;6;8;5;6;6;7;6;7;6 days. According to the results of the conducted experiments, the yield per hectare was determined according to the options.

Table N-1

Experimental method	Average number of seedlings per hectare (thousands)	Average number of pods in 1 bush (pieces)	Average weight of one bag (g)	Hosildorlik (ts/ga)	Additional yield obtained ±100kg/he
Irrigation over the ground	71,3	11,5	4,5	37,0	0
Drip irrigation	73,5	11,9	4,6	40,35	+3,35
	2,2	0,4	0,1	3,35	

As can be seen from the data of Table 1, the number of seedlings in drip irrigation is 2.2 thousand more, the number of pods is 0.4, the weight of the seedling is 0, per 1 gram, the maximum yield was more than 3.35 t/ha. Economic indicators were analyzed by comparing the costs incurred and the income received in the options for determining the economic efficiency.

Table N-2

Economic indicators of raw cotton grown in the experimental field. (per 1 hectare)

Options	Area (ha)	Gross yield (t)	Cotton raw material price (thousand UZS)	Costs spent on agrotechnical experiments (thousand UZS)		Electricity (thousand UZS)	Total costs
				until watering	after watering		
1	2	3	4	5	6	7	8
Egatlab (overland irrigation)	4	14,8	137122000	1750000	1030000	385990	3165990
Drip irrigation	10	40,3	337379000	1750000	-	209088	1206902

From our data in Table N-2, it is clear that the same 1750000 UZS were spent to irrigate 1 hectare of field area in both options. 1,030,000 UZS were spent on harvesting, watering, weeding, and 385,990 UZS were

spent per hectare, totaling 3,165,990 UZS. In the case of drip irrigation, 1,750,000 UZS were spent on agrotechnical activities before irrigation. Due to the lack of cultivation between the rows, 209,088 UZS per hectare were spent during the irrigation period, and 385,990 UZS of electricity were spent during irrigation, and 176,902 UZS of electricity were saved. In total, 1206902 UZS were spent on drip irrigation of 3165990 UZS per hectare of surface irrigated area, and 1959088 UZS were less spent on drip irrigation method. Based on the above, wise use of water resources in the drip-irrigated option, despite the reduction of agrotechnical processes, cotton grows at the same rate and provides abundant harvest, reducing the consumption of material and material resources, saving 43% per hectare. 176,902 UZS of total expenses were saved, 1,959,088 UZS were saved from electricity, and 310,210 UZS more income was made due to the additional harvest, and the cost of cultivated products decreased.

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