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SCIENTIFIC JUSTIFICATIONS OF TECHNICAL AND TECHNOLOGICAL ELEMENTS OF DRIP IRRIGATION OF FIBER COTTON

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ABOUT ARTICLE

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Abstract: Currently, the efficiency of using water resources is observed to decrease sharply due to sudden changes in weather, therefore, the use of modern irrigation systems is considered to be the demand of the time. As a result of significant savings in water consumption, mineral fertilizer, and fuel lubrication materials, only the root part of the plant is moistened, and the amount of water wasted by evaporation is significantly saved. Damage caused by water flowing over the edge of the field is not allowed. Significant savings in labor costs are achieved.

INTRODUCTION

The lack of rational use of water resources in Uzbekistan is currently one of the main reasons hindering the sustainable development of irrigated agriculture. One way to solve the problem may be to use a drip irrigation system (DIS). Drip irrigation was first developed in Israel in the early 1960s and introduced as an independent type of irrigation on an industrial scale. The positive results obtained in a short period of time contributed to the rapid spread of drip irrigation in many countries around the world. Drip irrigation is based on the fact that a small amount of water reaches the vascular part of plants. In this case, the amount of water and the frequency of its supply are regulated in accordance with the needs of the plants. Water is supplied to all plants evenly and in the same amount, exactly as much as the plant needs, without flooding the soil or wasting it. In addition, it is possible to avoid huge losses due to evaporation of water before its delivery to the plant. Until now, this method has not been able to

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attract the attention of land users in our country. There are many reasons for this. According to farmers, the main reason is the cost and complexity of TST, as well as the quality of its irrigation water (turbidity and siltation). When studying the elements of irrigation technology using drip irrigation methods for cotton, we have 8 egats for each experimental variant and 4 egats for protection, and the number of drip hoses (egats) from which the experimental results were obtained is 4. The experimental field consisted of 4 variants (1 control, 3 experimental), and the calculation of the variants consisted of 3 returns. In the experiment, the distance (width) between the drip hoses was 0.6 m. The length of the drip hose (egat) was 100 m. The area of each experimental site is 480 m2; is 0.6 x 4 x = 3.6 m; 3.6 x 100 = 360 m2; the area of the experiment with the following protection zone is 360 x 2 = 720 m2; - The area of the land plot of option 1 is 720 x 4 = 2880 m2 for the general options. 2880 x 3 = 8640 m2; This is 8640 values when calculating for all 3 returns. So, 4 options, 1 return, the total area of the plot is 2880 m2. During the experiment, the distance between the drip hoses was 0.9 m (width). With a drip hose length (egat) of 100 m. At each site, the options together with the security zone make up 720 m2. Then 0.9 (gate width), 8 (number of gates) 0.9 * 8 = 7.2 m (total gate width); 7.2 x 100 = 720 m2. The following options are the estimated area of 0.9 x 4 = 3.6 m outside the security zone, which is 100 x 3.6 = 360 m2; organized The total area of the land plot of the first option is 720 m2, and for the general option 720 x 4 = 2880 m2. So, in one return 4 options, and the total area of land of these 4 options is 2880 m2. Summing up our 3 returns, Sungra made 2880 x 3 = 8640 m^2 of the area of the drip hose (egat) at a distance of 100 meters. So, the total area of the land plot of 4 options, 3 returns is 8640 m2.

During the experiment, the distance between the drip hoses was 0.9 m (width). With the length of the drip hose (egat) of 150 m. On each experimental plot, the options together with the security zone make up 720 m2. Then 0.9 (gate width), 8 (number of gates) 0.9 * 8 = 7.2 m (total gate width); 7.2 x 150 = 1080 m2. The following options are the calculated area of 0.9 x 4 = 3.6 m outside the security zone, which is 150 x 3.6 = 540 m2; organized The total area of the land plot for the first option is 1080 m2, and for the general option - 1080 x 4 = 4320 m2. Thus, in one return there are 4 options, and the total land area of these 4 options is 4320 m2. Summing up our 3 returns, Sungra made 4320 x 3 = 12960 m2 of dripline (egat) area at a distance of 150 meters. So, the total area of the land plot of 4 options, 3 returns is 12960 m2.

During the experiment, the distance between the drip hoses was 0.9 m (width). With a drip hose length (egat) of 200 m. On each experimental plot, the options together with the security zone make up 1440 m2. Then 0.9 (gate width), 8 (number of gates) 0.9 * 8 = 7.2 m (total gate width); 7.2 x 200 = 1440 m2. The following options are the calculated area of 0.9 x 4 = 3.6 m outside the security zone, which is 200 x 3.6 = 720 m2; organized The total area of the land plot for the first option is 1440 m2, and for the general option - 1440 x 4 = 5760 m2. So, in one return there are 4 options, and the total area of land of these 4 options is 5760 m2. Summing up our 3 returns, Sungra made 5760 x 3 = 17280 m2 of the drip hose (egat) area at a distance of 200 meters. So, the total area of the land plot of 4 options, 3 returns is 17280 m2. Fig. 1 shows the arrangement of the system in the following form of the experimental system installed on the experimental field.

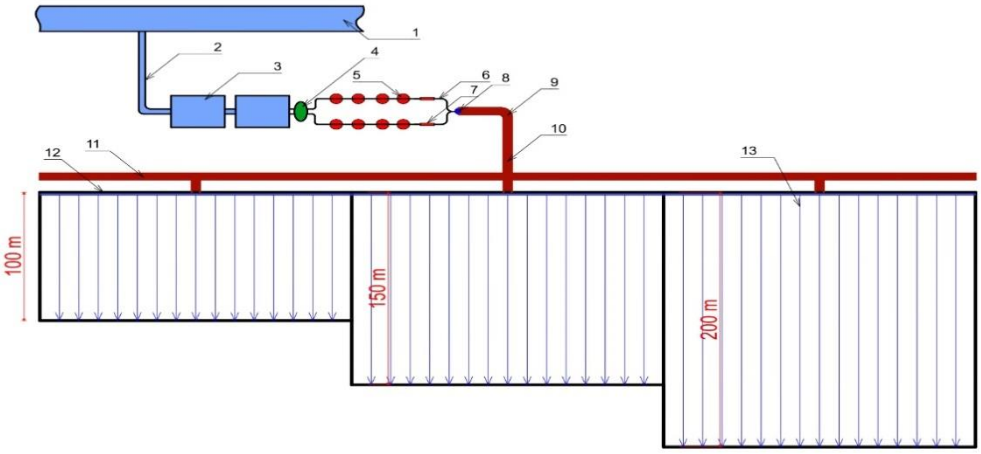

Figure 1. Experimental system located on the research territory

1- Rust of the main channel; 2- distribution channel; 3- water collectors; 4- pump unit; 5- sand filters; 6 - pipe for returning turbid water returned from the sand filter; 7- mesh filters; 8- tank for dissolving mineral fertilizers; 9- manometric water meter (device for measuring water in a pipe) and (device for measuring water pressure); 10- lever for maintaining the pressure of the main pipe; highway 11; 12- distribution pipes; 13- drip hose;

The field of experience in determining the elements of cotton drip irrigation technology is determined depending on natural and economic conditions, types of agricultural crops, irrigation rates of elements and elements of the irrigation system, calculation of the working pressure in the adopted irrigation system. The main objective here is to scientifically substantiate the method of drip irrigation of cotton, the technical elements of irrigation are shown below - the technical elements of drip irrigation were determined in one variant, for each experimental variant 4-8 drip hoses (egat) were used. taken, and 2 of their edges are cut off to distinguish them from other egat, - 4 drip hoses are left and limited by protectors, and the calculated egat is 4. The technical elements of drip irrigation are the location of the dripper every 0.30 m, water consumption of 1.6 l / h, the slope of the site i = 0.003 - 0.004, the length of the drip hose (egat) is 100 m, the distance between the drip hoses (egat width) is 0.9 m, soil moisture is 60-100-60 cm in the control, 40-60-40 cm, 40-40-40 cm, 60-60-60 cm in the experimental version was accepted. The reliability coefficient of uniform wetting of the drip hose is 0.95-0.98%. Before watering the fields of the variant, 10 m of stems were added, and 2-3 days after watering, the depth of moistening was measured on the cross-section of the field using a measuring device - a tensiometer. The most optimal option in option 2 is 40-60-40 cm, i.e. a slope of 0.0035, the length of the drip hose is 100 m, the distance between the hoses is 0.25 m, the soil moisture before watering is 65-75. -60% compared to the ChDNS, the length of the drip hoses is the same, the moisture coefficient on the plain was 0.98, the saving in water consumption was 2740 m3 / ha compared to the control options.

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