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SCHEME OF INSTALLATION OF A WATERING(TOS) DEVICE UNDER THE SOIL, THE TECHNOLOGICAL PROCESS OF ITS OPERATION

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Annotation. The article provides information on the balance of existing land areas in a number of developed countries, including Uzbekistan,on the implementation of scientific research work on this subject, the techniques and technologies used, a new device, its installation, application and positive results to be obtained, as well as scientific research work on finding a solution to this problem.

Keywords. humidifier, pipe, sandy soil, saline soil, gravitational-capillary, sorption, condensation, hydrostatic pressure.

Modern irrigation technologies also serve to increase productivity, save mineral fertilizers and labor in the amount of water savings. The decree of the president of the Republic of Uzbekistan dated February 3, 2021 No. PF-6159 "on the further development of the system of knowledge and innovation in agriculture and the provision of modern services"and .PQ-144 of 01.03.2022.the decision was made" on measures to further improve the introduction of water-saving technologies in agriculture " [1].

Moisten the spreading layer of the plant root of the soil through underground pipes; one promising method of irrigation is to water it from under the soil . It is effective to use this method in the cultivation of vegetable, technical crops, in gardens, vineyards, etc. Watering from under the soil.at a significant economy of water (30-40%) is achieved. Watering from under the soil.at water is given in low moderation, but more often, which gives ease to the good development of plants. In this method of watering, moist reserves are most accumulated in the zone where the root systems of plants are spreading, while the top layer (0-15 CM) remains dry or slightly moistened. As a result, in the soil concrete, the resin will not be porous, a good passage of air through the upper layer is ensured, there will be no conditions for weed growth and reproduction. Watering from under the soil. for the soil must have the property of high capillarity, the plot on which the water is supplied must be flat. This method cannot be used on large-grained, Rocky and saline soil. Ceramic, plastic and other pipes with

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holes are used as humidifiers. Depending on the way in which water is supplied, the irrigation from under the soil can be pressurized, non-pressurized and vacuum. The first experiments on the application of irrigation under the pressurized soil were carried out in Uzbekistan in the late 30s-early 40s of the 20th century in the Central Experimental melioration Sta of SoyuzNIXI, and later in the Agrotechnical experimental Sta of Swan. Watering from under the soil in the 60s and 70s. technology and construction have been studied in different soil types. Experimental production of irrigation from under the soil. the systems were built on the acquired lands of Mirzachul and Jizzakh desert (low-salinity suratloki on light soils), the largest of which was built on an area of 50-200 in the Syrdarya region.[2]. When watering from under the soil, water is given in low moderation, but more often, which contributes to the convenience of good plant development. In this method of irrigation, wet reserves of plants are most accumulated in the zone where the root systems spread, while the top layer (0-15 CM) remains dry or slightly moistened [2]. As a result, no solid is formed on the soil concrete, good air flow from the top layer is ensured, there are no conditions for weed growth and reproduction. For irrigation from under the soil, it is imperative that the soil has a high capillarity character, the plot on which water is supplied is flat. Depending on the way water is supplied, irrigation from under the soil can be pressurized, pressurized and vacuum [2]. Since the research of irrigation work under the soil in our republic was carried out mainly in the fields of the Jizzakh region and the Syrdarya region, there was no research in this direction due to the salinity of the soil in the Bukhara region. The change in ecology, the reduction of water resources from year to year, necessitated the study of the possibility of applying this system in cotton farming.On the implementation of this research, scientists from the Bukhara Institute of natural resource management of the National Research University “Tashkent Institute of Irrigation and agricultural mechanization - tsioning engineering” were most shimarib. Especially noteworthy is the work of the professor of the Institute SHavkat Jahanovich Imamov in this direction with his shogirts. From December 2021, experimental testing of the irrigation project began, moistening the acorn from the ground and feeding it with biocontrol brought from the Institute's labarator “renewable energies”. From this project, which is being carried out as a test, it is envisaged to conserve water economy, high crop yields and soil composition. This method of moistening irrigation from under the ground is laid plasmassa hoses at a depth of 40-50 CM. The total expenditure per hectare is Rs 78 crore. According to experts, the shelf life of these polythelin hoses is estimated at up to 10 years. Hoses buried under a fertile layer of soil serve to increase soil fertility, while in autumn they serve as salt washes, while Acorns serve for watering and feeding during the growing season. The level of salinity of a field washed in brine in a new way, judging by the opinions of our scientists, is maintained for 3-5 years. Salts that enter the cultivated land during the growing season with water, with rain and in other ways have been calculated and come to this estimate. Another of the main reasons for the increase in salt content of the soil is also the dynamics of the uplift of groundwater si zot [5].

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1-Figure . Installation of plastic pipes under the soil on the experimental plot.

In preventing salinity, that is, to prevent re-salinity from occurring, researchers have proposed strict preventive measures to the factors considered. Not every indicator of the earth should avoid attention to the culture of mining, only then the intended harvest can be obtained. In order to solve this problem, scientists from the Bukhara Institute of Natural Resources Management have conducted and are conducting research to determine and establish the main indicator values of moistening irrigation from under the soil.

In research work, it was determined that:

1. The depth of installation of the soil moisturizing pipe. The cultivated fields of Bukhara vilyat are saline, these fields are annually 2..Washed 3 times using water. In this case, an average of 1500 m3 of water is spent on each wash. As a result of perennial saline washes, the thickness in the soil layer (30...50 cm from the surface of the Earth) is 30..A solid layer of 50 cm was formed. With this in mind, the depth of installation of the soil moisturizing pipe was taken as 50 cm.

2. The diameter of the humidifier. Research was carried out on the diameters of the humidifier in cases where d=4 mm, d=5 mm D=6 mm D=7 mm, and d=8 mm.

3. The limit of hydration in moistened soil was studied under labaratory conditions and used in field experiment. (This limit was determined using a special device. The device is composed of: tripod (column) , water tank , water tank fixing device, water quantity increasing or decreasing (adjusting) device, water direction tube, humidifier and transverse cross section of moistened layer).

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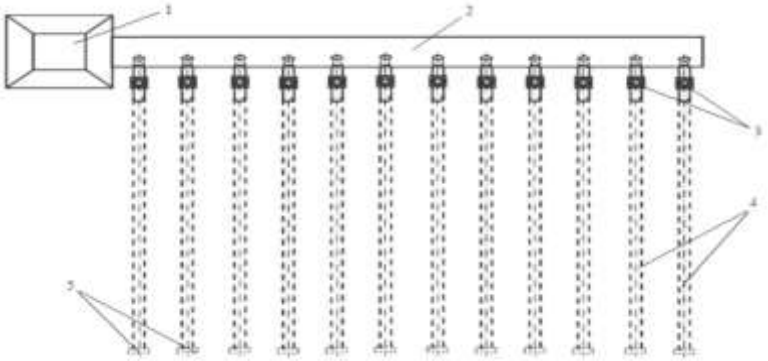

2-Figure: irrigation device from under the soil.

Compound 1 is a retractable ditch, 2 is a central pipe, 3 is a diver(valve), 4 is a main pipe, 5 is a control rail(slivnoy).

Conclusion.

1. In the saline soils of the Bukhara region, too, it is possible to wash the soil in the fall, using a pelvic device, in which the level of salinity of the soil should be lower than 0.5.

2. The TOS device knocked out the pipe according to the purpose if it is thrown at a depth of 50 - 60 cm in the layer where the crop is planted.

3. Experiments have shown that the diameter of the main pipe should be 50 mm, the diameter of the central pipe should be 100 - 120 mm , the diameter of the humidifiers should be 5 - 6 mm, the diameter of the humidifiers should be 150 -200 mm, the diameter of the main pipe should be 900 - 1200 mm.

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