
EFFICIENT OPERATION OF A RAIN IRRIGATION INSTALLATION UNDER THE CONDITIONS OF THE KORAVULBAZOR DISTRICT

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Annotation.

The article discusses the advantages and disadvantages of water-saving technologies, including sprinkler irrigation, and their application, taking into account local conditions.

Keywords.

Agriculture, irrigation, springkler, frugality, technology, machanism, soil, salinity.

Demand for water resources is increasing from year to year due to factors such as population growth, increasing demand for food, expanding industrial production, climate change in countries around the world. As a result, in many regions of the world there is a trend of water scarcity.

It is known that the agricultural sector is the largest consumer of water worldwide. Therefore, the entire scientific community is focusing on the rational use of water in agriculture, especially on irrigated agricultural fields, including the widespread introduction of water-saving technologies, as the most priority way to solve the problem of water shortage.

Over the past five years, the respected President Sh. Mirziyoyev has adopted a number of decrees and resolutions on the development of water management, the introduction of water-saving technologies, and as a result of them, in order to encourage agricultural producers who have introduced new irrigation equipment, the state Establishment of a mechanism for allocating subsidies, creating a number of benefits for producers agricultural products made a radical turn in the

development of irrigated agriculture. As a result of the attention of the state leadership, the improvement of the necessary legal norms and the consistent application in practice, the scale of the introduction of water-saving irrigation systems in our country has increased dramatically in recent years. In 2021 alone, the areas where water-saving technologies are introduced will increase by 5 times and cover 22% of the total irrigated area, and in the next five to seven years this figure should reach 50%. The Parliament of our country is also carrying out large-scale work to improve legislation in the field of water management.

As the head of our state emphasized, it is necessary to approach each issue with knowledge and experience, advanced modern technologies were brought from foreign countries, their specialists were involved. Due to the year-by-year expansion of the areas where these technologies are introduced, many enterprises have been established in our country, and the local production of irrigation system equipment has been launched.

Now there is a need for local personnel who build and maintain modern water-saving irrigation systems. At the same time, the issues of a creative approach to these irrigation systems, their improvement, adaptation to the specific soil and climatic conditions of Uzbekistan are becoming more relevant day by day, and this is required by life itself.

At present, when climate change has become a global problem, the efficient use of water resources has been put on the agenda. In addition, the need for water in Uzbekistan is increasing due to the wasteful use of natural waters, which can deplete limited resources, the constant increase in population and consumption in accordance with population laws, and high economic growth rates.

The growth of the world population, including Uzbekistan, causes an increase in demand for food from year to year. In conditions when the available volumes of water resources, which are the main source of food production, are declining, the issue of developing effective methods for their use and economical use of available water resources becomes more and more urgent every day. In this situation, in most countries of the world, the use of water-saving crop irrigation technologies is being widely introduced in order to save water without wasting water in the most water-consuming agricultural sector. In this regard, such countries as Israel, Japan, Jordan, China, USA, Italy, Turkey, Greece, Australia and India have achieved great results.

Located in the center of the Asian continent, thousands of kilometers from the oceans and seas, our country is one of the 2 countries in the world that need to

cross the borders of at least 2 other countries to access the oceans. As mentioned above, in the conditions of the Republic of Uzbekistan, where the waters of the main rivers flow from transboundary territories, the issue of efficient use of water resources is considered especially relevant.

Due to the excessive use of water by the extensive agriculture of our country, the problem of shortage of water resources primarily affects the water supply of irrigated areas, and this influence is increasing every year. Under such conditions, the application of water-saving crop irrigation technologies will further enhance the value of these benefits.

For this purpose, with the initiatives of the President, in the last five years, the state has paid great attention to the widespread introduction of water-saving technologies of crop irrigation. In particular, a number of benefits, such as tax breaks and government subsidies, have been created for agricultural producers who have introduced water-saving irrigation systems. As a result, the scope of application of water-saving technologies in our republic is expanding every year. In this process, of course, there is an increasing need for qualified national specialists who introduce water-saving irrigation systems, operate them, and provide after-sales service.

Training of qualified local personnel for the field of water management, improving the system of their training, developing mutual cooperation in the field of education, science and production, as well as the need to introduce scientific achievements and know-how into production are the priorities of the strategic tasks of our state.

In particular, according to the Decree of the President of the Republic of Uzbekistan №. PF-6024 dated July 10, 2020 "On approval of the Concept for the development of the water management of the Republic of Uzbekistan for 2020-2030", by 2030 it is planned to increase the area of water-saving irrigation technologies in our country to 2 million hectares, according to Decision PQ-5005 of February 24, 2021 "On approval of the Strategy for the Development of Water Resources and Irrigation in the Republic of Uzbekistan for 2021-2023", tasks were set to accelerate the expansion of sown areas on which the drip irrigation system will be introduced, up to 800 thousand hectares per 2023.

As a result of comprehensive support at the level of state leadership, in recent years, effective work has been carried out to raise the standard of living of the country's population to higher levels by increasing the quantity and quality of the crop obtained from irrigated areas based on the efficient use of water resources.

In the course of our research work in the Karavulbazar district of the Bukhara region, we carried out a number of works to improve the efficiency of sprinkling machines, which are one of the water-saving technologies, as well as to adapt them to the conditions of the area. (Figure 1).

Studies have shown that sprinkling irrigation has a number of disadvantages. That is:

- high demand for metal for machine and device; m³
- high energy consumption during irrigation (40-100 kWh of electricity is consumed for irrigation of 300 m³/ha);
- low yield at high irrigation rates;
- uneven distribution of water in strong winds, increased evaporation;
- complexity of irrigation technology;
- restriction of use on saline lands;
- Violation of the structure of the surface layer of the soil, the appearance of lumps.



1 - picture. The process of installing sprinkling machines in Karovulbazar district

But as a result of research, we found that along with the above disadvantages, there are a number of advantages.:

- you can change the depth of soil moisture through the irrigation rate;
- an increase in the relative humidity of the surface layer of air and a decrease in its temperature, which protects crops from frost;
- uniform distribution of water over the field and the absence of requirements for its relief;
- no need to build a furrow and ditches;
- the possibility of supplying mineral fertilizers with irrigation water;

- adaptability to furrow irrigation;
- water saving method, high water utilization coefficient (WFC);
- high land utilization coefficient (LFC).

In conclusion, it should be noted that in the conditions of Uzbekistan, located in an arid region, agriculture is the most water-consuming industry. About 90% of available water resources are used for agricultural production. In recent years, the state has allowed the efficient use of available water resources based on the widespread introduction of water-saving irrigation technologies for irrigating crops. As a result, the available water reserves are preserved.

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