

DRIP IRRIGATION OF GARDEN

Z.Z. Kadirov - Associate Professor, PhD.

B.E.Bozorov - Assistant

E. mail: bozorovbustonjon@gmail.com

M.M. Avliyokulov – Master

E. mail: muxammadavliyoqulov01@gmail.ru

"TIQXMMI" National Research University of Bukhara Medical Resources
management institute

ABSTRACT

One of the important factors that create soil is relief. The relief shows the formation of soils, the formation of diversity of soil cover. Relief mainly participates in the redistribution of solar radiation and moisture on the earth's surface. The thickness of alluvial deposits in the regions of Uzbekistan is 1.5-2.0 m. It is known that the appearance of these deposits is connected with human activity, that is, with the development of farming culture for many years. As mentioned above, these deposits are different in many places according to their mechanical composition. Therefore, they are often salted to varying degrees.

Key words: Drop, temperature, humidity, seedling, dropper, plant.

Uzbekistan is located in the center of the huge Euro-Asian continent. 4/5 of the territory of our country is located in the vast desert and semi-desert lands of Central Asia, which are bounded by high mountain ranges from the south-east and east. It is bordered by the deserts of South Kazakhstan from the north, it is joined by Tianshan in the north-east and east, and the Hisar-Olai mountain ranges in the south-east. The region of Kyzylkum is separated from Karakum by the not very high Ustyurt plateau along the Amudarya.

An important factor of the current climate in the territory of the republic is the solar radiation coming to the earth's surface and increasing especially in the summer months. Looking at the climatic region of Central Asia, it becomes clear that Gijduvan district, located in the Zarafshan river delta, is located in the hot desert region. Here, the summer days are hot, and the winter is a little cold, and the climate changes sharply between night and day. The weather is dry, there is little precipitation. Warm temperatures in summer affect the normal growth of crops. It also affects the soil cover. The annual temperature of Gijduvan district is higher than 23°C. The total positive

temperature during cotton growth is 4650 - 4850 °C. The aridity of the climate is represented by the lack of precipitation here. On average, 85-135 mm of precipitation is observed in 1 year. The radiation from the earth's surface is about 2540 mm per year. Drought is also observed in autumn. Rainfall is short-term in winter and spring. The relative humidity of the summer months does not exceed 20%. The spread of sand and loam particles carried by the wind on irrigated lands leads to the formation of various mechanical structures in the soil layer. In addition, the wind causes drought. As a result, the dryness of the air, in turn, causes cotton and other agricultural crops to drop their leaves and flowers. Evaporation and evaporation are 10-15 times higher than precipitation.

Use of drip irrigation method for watering gardens

In drip irrigation, irrigation water is continuously supplied to the root layer of the plant in the form of drops with the help of special droppers with small irrigation rates. In this irrigation method, together with water, nutrients in the form of a solution can be regularly fed to the plant.

Based on the general irrigation structure of the drip irrigation system, the irrigation process is as follows:

-
- 1) water passed through a special cleaner is supplied to distribution pipes through a branch pipe;
 - 2) water from the distribution pipe is supplied to the field pipes;
 - 3) water is transferred from field pipes to irrigation tubes equipped with special drippers, and from drippers to the surface where the root layer of plants spreads.

All pipes, except irrigation pipes, are buried in the ground. The main part of drip irrigation systems is the dripper. Based on the technical performance of currently used drippers, we adopt a low pressure drip irrigation system for our farm.

The technical parameters of the dropper are as follows:

1. Diameter of flexible polyethylene pipe – 25 mm.
2. Type of droppers - labyrinth - slotted.
3. The distance between the droppers is according to the seedlings.
4. Water consumption - 4.0 l/h;
5. Working pressure - 1-2.5 m water column.
6. The length of the irrigable edge in relation to the slope:
 - at $i = 0.001 \rightarrow 250$ m;
 - at $i = 0.003 \rightarrow 500$ m;
 - at $i = 0.006 \rightarrow 1000$ m.
7. The service life of a flexible polyethylene pipe is 3-4 years.

8. The service life of the underground pipe system and the quencher is 15-20 years

9. Consumption of drip pipe per hectare (pog.m) and cost of the system (million soums):

- between rows of cotton - 90 → 1.6–2.0;
- in gardens - when there is 5 meters between seedlings → 2000 → 0.9 - 1.7;
- in gardens - when there is 8 meters between seedlings → 1250 → 0.7– 1.3;
- in vineyards - when there are 3 meters between seedlings → 3400 → 0.9–1.4;
- in vegetable crops → 5600 → 1.5–2.2;
- in polys crops → 3000 → 1.6;

Technical characteristics of a flexible polyethylene pipe with a dropper

T.r .	Characteristics	Meas ure unit	Amou nt
1	Diameter	mm	25
2	Type of droppers	labyrinth-slotted	
3	Water consumption per dropper (vs. pressure)	l/s	1-3
4	The distance between the droppers	sm	differe nt
5	Drip unevenness: at 500 meters; At 1000 meters	%	10
		%	15
6	The water column necessary for the operation of the system	m.	2,0 – 2,5
7	Optimal egate length	m	250,0
8	Optimal slope of the field		0,003- 0,006.
9	Period of operation	year	3
10	Life cycle of main plastic pipes	year	10 - 12
11	The cost of drip pipes, hoses, connecting pipes, main structure, construction costs, other costs for one hectare of land (as of 01.01.2023): Between pear seedlings according to the 6x5 scheme, when the area is divided into 1; Between apple seedlings according to the 6x5 scheme, when the area is divided into 1; • Between the almond seedlings according to the 6x5 scheme, when the area is divided into 1;	Soum	77500
			0; 1mln;
			2815000;
			90000; 8928800; 1138000
	Total costs (for 1 hectare)	Soum	20 08 9 800

REFERENCES:

1. Resolution No. 794 of the Cabinet of Ministers of the Republic of Uzbekistan dated 12.17.2020 "On measures to develop the agro-industrial complex of the Republic of Uzbekistan and the digitization system in agriculture".
2. Ismailov S.Yo. Automation of the drip irrigation system for orchards and vineyards on the sloping and rainfed lands of Uzbekistan, dissertation. - Tashkent. 2020: - 100 st
3. B.S. Bezborodov G.A. Kamilov, Esanbekov Yu. Electromagnetic tillage of soil during drip irrigation of cotton. Sat. scientific drip irrigation works. Toshkent, 1995, pp. 68-74.
4. Nazarov R., Tojiev M.-Ground for abundant harvest // Agricultural journal of Uzbekistan - Tashkent, 2006. No. 5. -p. 2.
5. B.S. Bezborodov G.A. Kamilov, Esanbekov Yu. Electromagnetic tillage of soil during drip irrigation of cotton. Sat. scientific drip irrigation works. Toshkent, 1995, pp. 68-74.