

SEASONAL AND TOTAL WATER CONSUMPTION IN GROWING ALOE (ALOE ARBORÉSCENS) MEDICINAL PLANT OUTDOOR AND IN GREENHOUSE WITH DRIP AND SPRINKLER IRRIGATION METHODS

**Irismetova Nodira Usman kizi – PhD student of Tashkent State
Agrarian University, Irismetova93@nu.ru**

Abstract. In the article, aloe medicinal plant seedlings were grown in outdoor and greenhouse conditions on special substrates made of a mixture of soil+sand+rotted cattle manure for 4 years using rain and drip irrigation methods. It was found that the total amount of water used during the year was 1400 m³/ha in the drip irrigation method, and 2569 m³/ha in the sprinkler irrigation method.

Keywords: aloe medicinal plant, outdoor, greenhouse, substrate, drip irrigation, sprinkler irrigation.

Introduction. In the conditions of Uzbekistan, the development of agro-technologies for the cultivation of perennial aloe medicinal plant as an environmentally friendly product in the open field and greenhouse conditions, including irrigation methods and irrigation procedures, and meeting the demand of "Farmsanoati" for raw materials of aloe medicinal plant is considered a major issue.

Experimental system and methods. Scientific experiments to study ways of cultivation of aloe medicinal plant in greenhouse and open field conditions were carried out at the horticultural farm "Kibray Archa Bogi", Kibray District, Tashkent Region.

To grow aloe medicinal plant in pots, standard plasma pots with a volume of 78.5cm³ were selected and substrates with different contents were placed in them. The composition of the substrates according to the experimental options was as follows: option 1 soil (in a ratio of 1), option 2 sand (in a ratio of 1), option 3 of the experiment soil+sand (in a ratio of 0.5:0.5), option 4 of the experiment in the variant it was soil+sand+manure, and their ratio was 0.3:0.2:0.5.

Research results. When the aloe medicinal plant was grown in open and greenhouse conditions, the average water consumption was 200 g/bush under drip irrigation and 500 g/bush under sprinkler irrigation.

Figure 1 shows seasonal spring-summer and autumn-winter and total annual water consumption of aloe medicinal plant under open and greenhouse conditions under drip and sprinkler irrigation methods. According to the data presented in this

diagram, the average of 1036 m³/ha and 1862 m³/ha for sprinkler irrigation in spring-summer season in the open field is 1036 m³/ha in the experimental years,



Figure 1. Seasonal and total water consumption for the cultivation of tree aloe medicinal plant under outdoor and greenhouse conditions (m³/ha).

in greenhouse conditions, 364 m³/ha was required for drip irrigation, and 707 m³/ha for sprinkler irrigation.

The amount of water used during the year was 1400 m³/ha in drip irrigation and 2569 m³/ha in rain irrigation. In the experiment, the total water consumption of the sprinkler irrigation method is 1169 m³/ha more than the drip irrigation method, which is because the water given by the sprinkler irrigation method is given to the plant and soil surface in the form of rain. water consumption was relatively low.

In conclusion, it can be said that when the aloe medicinal plant was watered in the above-mentioned manner for 4 years in the experimental area, a relatively high mass of leaf yield was observed in 4 variants of the experiment, in which it was irrigated by rain (2,039 kg/bush), and when it was drip-irrigated, 1,850 kg/bush of leaves was obtained.

References

1. Avlyakulov M. Necessary conditions and types of crops required for the introduction of sprinkler irrigation technology in the regions.T.2024. Pages 5-7. (In Uzbek language)
2. Murdakhaev Yu.M “Medicinal plants found a country from Uzbekistan” Tashkent, 1990. (In Uzbek language)
3. Luxury plants.ru / ukhod / aloe - ukhod /
4. <https://green-land.ru>.