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CULTIVATION OF ALOE (ALOE ARBORÉSCENS) MEDICINAL PLANT IN OUTDOOR AND
INDOOR CONDITIONS WITH SPRINKLER AND DRIP IRRIGATION METHODS**A. Shamshiev***Doctor of agricultural sciences, professor, Uzbekistan***N. Irismetova***PhD student of Tashkent State Agrarian University, Uzbekistan***ABOUT ARTICLE****Key words:** Aloe medicinal plant, outdoor, greenhouse, substrate, soil, sand, manure, drip irrigation, green leaf production, sap production.**Received:** 11.10.2024**Accepted:** 16.10.2024**Published:** 21.10.2024**Abstract:** The article presents the results of scientific research on the cultivation of aloe medicinal plant (Aloe drevovidnoe (lat. Alóe arboréscens.)) in the conditions of Uzbekistan under sprinkler and drip irrigation methods in outdoor and indoor conditions. It was found that 2.039 kg/bush of green leaves can be obtained when grown in a mixture of substrates with manure-50%, sand-20%, soil-30% for 4 years under sprinkler irrigation.**INTRODUCTION**

80% of the world's cultivated aloe medicinal plant belongs to the US company Forever Living Products, which has 6,000 hectares of aloe plantations. In Russia, there are aloe plantations on 2.5 thousand m² of greenhouse area.

In the conditions of Uzbekistan, it was determined that it is possible to propagate and grow the type of aloe medicinal plant "Tree-like aloe" Aloe drevovidnoe (lat. Alóe arboréscens) indoors. Development of agro-technologies, including irrigation methods and watering procedures, as an ecologically clean product in the field and greenhouse conditions, and meeting the demand of "Farmsanoati" for aloe medicinal plant raw materials is considered a major issue.

EXPERIMENTAL SYSTEM AND METHODS

Scientific experiments to study the methods 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.

Table 1
Experiments were conducted in the following scheme

Option no	Options name	Content, %
Drip irrigation		
1.	Soil (control)	Soil 100%
2.	In sand (1-2mm)	100% in sand
3.	Sand + soil mixture	Sand-50%-soil-50% mixture
4.	A mixture of soil+sand+rotted cattle manure	Dung-50%, sand-20%, soil-30%, mixture
Sprinkler irrigation		
1.	Soil (control)	Soil 100%
2.	In sand (1-2mm)	100% in sand
3.	Sand + soil mixture	Sand-50%-soil-50% mixture
4.	A mixture of soil+sand+rotted cattle manure	Dung-50%, sand-20%, soil-30%, mixture

To grow aloe medicinal plant in pots, standard plasma pots with a volume of 78.5 cm³ were chosen. In order to draw excess water accumulated in the pots during the research and to regulate the air condition of the substrate in the pots, each pot is connected to a drainage pipe (drainage pipe plasmassa d- 20 mm) and they are it is placed in a trench 20 cm deep, 25 cm wide, and 8 m long. The drainage pipes are connected to an open collector in the lower part of the trench. 15 cm of the trenches are buried with soil. Gravel with a size of 0.5-1.0 cm was placed at the bottom of the pots with a thickness of 5 cm and filled with appropriate substrates, then drip irrigation pipes were placed along the surface of the pots and one dripper was installed in each pot.

To prepare the substrate, washed fine sand and fully decomposed cattle manure from the soil layer (30 cm deep) were used in the irrigated fields. Soil, sand, rotted manure were sieved separately through a 2 mm sieve, and they were mixed together and placed in polyethylene containers.

The composition and proportions of the substrates according to the experimental options are as follows: the mass of dry soil placed in the pots in the 1st option was 2,486 kg (in the 1st ratio), the sand mass used for the 2nd option was 3,843 kg (in the 1st ratio), in the 3rd option of the experiment, soil+sand was 1,617 kg, and the sand part was 1,632 kg, totaling 3,249 kg, in the ratio of 0.5:0.5. In the 4th variant of the experiment, soil was 0.622 kg, sand was 0.415 kg, manure was 1.029 kg, the total was 2.066 kg, and their ratio was 0.3:0.2:0.5. Aloe medicinal plant seedlings were grown on the above-mentioned substrates for 4 years under open and greenhouse conditions. The above-mentioned substrates had different effects on the leaf productivity of aloe medicinal plant. The green leaf yield of plants in the 4th year of the experiment was 1,528 kg/plant in option 1 under drip irrigation, 0,912 kg/plant in option 2, 1,636 kg/plant in option 3, 1,850 kg/plant in option 4, and according to options in sprinkle irrigation method It was 1,672 kg/tuvak in option 1, 1,060 kg/tuvak in option 2, 1,728 kg/tuvak in option 3, and 2,039 kg/tuvak in option 4. The leaf yield obtained by the drip irrigation method options compared to the leaf yield increased by the sprinkler irrigation method was 0.144 kg/pot in the 1st option, 0.148 kg/pot in the 2nd option, 0.092 kg/pot in the 4th option, and 0.189 kg/pot in the drip irrigation method was observed to be high.

CONCLUSION

1. The most suitable substrate for growing aloe medicinal plant seedlings in outdoor and greenhouse conditions should be a mixture of humus-50%, sand-20%, soil-30%.
2. Aloe medicinal plant was sprinkler-irrigated (2,039 kg/bush), compared to drip irrigation (1,850 kg/bush), it was found that more leaf yield can be obtained.

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