

Scientific rationale for the use of low-intensity sprinkling systems in mountain irrigated agriculture in Azerbaijan

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The results of the study revealed that the mismatch intensity rain rate of water absorption into the soil formation of a surface relief and soil erosion, uneven and shallow soaking imperfection open irrigation system at a superficial irrigation, the need for different irrigation methods in the growing and not growing periods, low coefficient land utilization, high cost of irrigation and other features are, to a certain extent in conflict with the requirements of watering cultivated with techniques for / of crops in an area at the deep groundwater.

Keywords: irrigation interval, irrigation, water capacity, groundwater, loam, a count unit, slope, soil fertility, and others.

Introduction

The increase in the production of agricultural crops is one of the priorities of agrarian production in Azerbaijan, both for meeting domestic needs and for exporting them. In solving this problem, a significant role belongs to the regions, the natural and climatic and economic and economic conditions of which are favorable for the successful development of irrigated agriculture. And taking into account the long traditions and high level of professional training of agricultural specialists, the experience of the population and the transfer of this direction to the private sector, we can safely assert not only the development of mountain-irrigated agriculture in Azerbaijan in the coming years, but its revival based on the introduction of high-performance modern technologies Irrigation, as pulsed sprinkling, micro-irrigation, pulsed sprinkling of self-oscillating action, combined irrigation, impulse rain Self-oscillating action with automated control and a number of others.

Taking into account that the territory of Azerbaijan, which is the most favorable for cultivation of various types of crops by natural conditions, is located in zones of unstable and insufficient moisture, the intensification of fruit growing is possible only with the use of low-intensity irrigation systems. The necessity of using this kind of irrigation is also due to

the increased demand of agricultural crops for moisture supply.

Course of research and discussion of results:

At the research facilities on the territory of the Republic, irrigation with micro-irrigation was carried out on medium and large slopes with a deep level of groundwater in the period 2005-2011.

At the same time, the cultivation of fruit trees with an irrigation device of the IDAD type and a micro-diver of various modifications was studied in the experimental site of the OEB of the Institute of Erosion and Irrigation of ANAS in the village of Malakh of the Shemakha district with an area of 4.82 hectares, in the period 2006-2010, in the Guba RWC in the Shahdag foothills on an area of 2.8 hectares, in the period 2004-2006, the work was also carried out in the Ganja district of the PAC in the village of Ganja, Bagmanly with an area of 4.45 hectares, in the period 2007-2011.

On irrigated light chestnut soils with a maximum moisture capacity of 3000-3100 m³ / ha and on deep-seated serozems

Groundwater in the Alazansky valley of the Zakatala district in the period 2004-2006.

49 irrigations (500-650 m³ / ha) with an irrigation rate of 1890 m³ / ha were carried out. Only the upper layer of the soil (28-30 cm) was moistened.

In the middle of July, the moisture content of the soil in the 30 cm layer decreased to 40% (from PPW), and in early September to 40-60% (in the meter layer), which led to drying and a decrease in maize yield for silage and winter wheat. At the control plot (five irrigation on furrows with an irrigation rate of about 16,000 m³ / ha), the humidity was 80-100% of PPV.

As a result of the research it was recommended to optimize the irrigation norm, the number of irrigation

and the reduction of inter-irrigation periods; It was pointed out that it was expedient to use sprinkling with the use of the design developed by the author for the various modifications of microirrigation systems tested at the experimental site, where watering along the furrows proved to be difficult, and in general impossible at all.

At the Institute of Erosion and Irrigation of ANAS with the participation of the author, experiments on irrigation with the IDAD apparatus and other modifications of the micro-irrigation technique of various types of agricultural crops on newly developed rainfed lands have been continued. On the example of the objects of research on which the experiments on the problems of the development of mountain-irrigated agriculture in the zones of Guba-Khachmas, Ganja-Gazakh, Garabagh, Upper Shirvan, Sheki-Zagatala and other regions of the republic were laid.

It should be noted that in the zones of the experiment the soils are overlying, felling, loam (sierozem), and so on. Land with different soil characteristics, and in all these zones of the experiment the groundwater table is deep.

With all this, it was planned to increase the density of plants and not to conduct inter-row treatments.

From the experimental sites on the territory of the research objects, from which a "registration site" with more amicable shoots was isolated, divided into plots located at the site of the Shemakha OEB Institute of Erosion and Irrigation of ANAS in the village of Malham and Guba RAN in the foothills of Shahdag in the Guba area with a total area of 4 , 82 hectares. (See Table 1).

Conclusions:

The analysis has shown that irrigation with micro-irrigation can also find its spread in conditions of close lying of non-saline groundwater.

At a high level of groundwater, high yields of agricultural crops can be achieved, however, technical and economic indicators at the given level of development of sprinkling equipment in the presence of socio-economic conditions of life of farming and other farms of the republic are less favorable than surface furrow irrigation.

Further improvement of sprinkler systems with higher technical and economic indicators, possibly, will allow to expand irrigation area of micro-irrigation in conditions of mountain-irrigated agriculture in Azerbaijan. For this purpose, in the future, micro irrigation systems of the type IDAD and others proposed for serial production were not tested in the republic for any more (except for research objects) for sprinkling.

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