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PROBLEMS OF FARMING IN SOILS AND IRRIGATION OF PLANTS IN THE CONDITION OF KARAKALPAKSTAN

Annotation. The article provides information on the problems of irrigation and farming in the Republic of Karakalpakstan. It states that there is not enough river water at all to irrigate crops and wild agricultural crops in the fields, or that this work has been done in very small quantities. It also provides information on the area currently irrigated and the salinity level in the area.

Keywords: farming, irrigation, melioration, collector-drainage, plant.

It is known that due to the global, negative environmental and extreme conditions in the Aral Sea region, the scale of drought and desertification in the region is growing. Due to the increasing degradation of soil and vegetation, the productivity of irrigated land is decreasing. Today, 119,25 thousand hectares (23%) of irrigated lands (515, 20 thousand hectares) in the Republic of Karakalpakstan are not saline, 150,17 thousand hectares (29%) are less saline, 198,85 thousand hectares (39%) are average saline and 46, 93 thousand hectares (9%) are strongly saline soils. Due to this, there are great difficulties in growing agricultural crops and getting a rich harvest in the territory of the Republic [9].

The average annual yield of cotton is 17-21 centners per hectare, wheat – 25-27 centners per hectare. This is a very low figure, of course [4, 10].

Improving the reclamation of irrigated and arable lands in order to increase the efficiency of agriculture in the region, low tillage (zero tillage) of arable lands, prevention of deep tillage of land, protection of gray soil moisture, need to carry out the fuel and lubrication, oil saving, water supply, selective planting of water-resistant, low-water-demanding crops and varieties adapted to growing in saline soils, new methods of growing abundant crops we need to produce innovative technologies.

In general, the population should be provided with high-yielding, high-quality and nutritious food, rich in vitamins, macro-micro elements, fodder for medicinal and livestock, as well as useful, resistant to salt and water shortages and the short-term introduction of fertilizers into production remains one of the most important and urgent tasks today.

It is known that it is an important nutrient for human life, and the cultivation of medicinal and fodder crops in animal husbandry depends mainly on the volume of irrigation water and the mineralization of fertilizers. In the all districts of the Republic of Karakalpakstan (except the Southern part) there is not enough river water at all for irrigation of cultural and wild agricultural crops, or this work is carried out in very small quantities.

This need legally requires us to search for reserve water resources important for irrigation. Such water sources include KS-1, KS-3, KS-4, KKS, GLK, North Ustyurt, South Beruni main collectors located in the Southern Aral Sea Basin (in the territory of the Republic of Karakalpakstan), many inter-farm and on-farm collector- collector-drainage systems [3, 7].

Due to the shortage of irrigation water, in most cases, collector-drainage water, which is a source of water, is used to irrigate plants. However, these waters are not always suitable for irrigation. Over the last two years, the volume of

collector-drainage water has been significantly reduced and the mineralization of fertilizers has been increasing [1, 2]. Thus, this situation can lead to unexpected negative effects on our farmers (extinction of plants, low yields, etc.).

In order for agrocenoses and phytocenoses of any agricultural plant to grow, develop, produce abundant and high-quality crops, soil fertility, volume, quality and other indicators of irrigation water must be in order [8].

Farming is mainly developed in the Amudarya delta. Every year yields are obtained by irrigating agricultural crops (cotton, wheat, rice, corn, melons, etc.) with Amudarya water. Depending on the amount of irrigation water intended for agriculture, there are collectors of different mineralizations and different volumes. During the years of water scarcity in the country, depending on the necessary conditions, in some places a legal system of irrigation of cultivated and alien flora with mineralized collector-drainage water is used, which often improves the conditions of agrocenosis and natural phytocenosis of food, medicinal and fodder plants.

Some aspects of the above-mentioned problems have been sufficiently studied and put into practice in most countries of the world (Israel, Canada, the Netherlands, etc.), in the Commonwealth of Independent States and in irrigated areas along the South Aral Sea [5, 6].

However, very little research has been done in the Republic of Karakalpakstan, where river water is scarce (mainly collector-drainage water), and in the dried-up Aral Sea floor and adjacent areas of the Southern Aral Sea Basin. This problem is one of the most pressing issues today.

Thus, the development of technologies for growing useful plants for the population in the extreme ecological conditions of the Southern Aral Sea region is one of the main ways to solve this problem positively and effectively.

In the extreme ecological conditions of the South Aral Sea region, it is important to scientifically study the impact of irrigation of various plants with

collector-drainage water, the zone of soil aertia, its water-salt regime, groundwater on agricultural crops and fertilizers on seeds, physiological growth processes.

The implementation of these problems is of great importance in providing a certain level of employment, protecting the environment and, most importantly, maintaining human health.

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