

**STUDYING THE HISTORY OF THE RESEARCH ON THE SOILS OF  
ARAL SEA**

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Today, the process of salinization of soils has been taking place all over the planet of Earth. The excess salt content is typical for 25% of the soils of earth. This is also relevant to the soils of Uzbekistan, where about 48.6%, including 75.8% of irrigated land in Karakalpakstan is salinized at variable degrees [8].

The lower reaches of the Amu Darya have long been known in the literature as a region of widespread saline soils of different degrees of salinity and significant development of solonchaks. The spatial regularities of the distribution of soils of different degrees of salinity over the territory of ancient deltas are extremely complex and, at first glance, the variegated distribution of saline soils seems random and not amenable to regular explanations. P.A.Letunov (1958) in his studies focuses on the fact that the diversity in the location of saline soils is created in the process of formation of alluvial soils of delta, which is associated with the hydrological and hydrogeological conditions of delta relief features, the degree of strength or drainage of delta lakes, and also with the influence of marsh, meadow and tree vegetation of the living delta. Below these horizons lie almost unaffected by soil forming alluvial deposits, characterized by a sharp stratification of the mechanical composition: from clay to sand [1,7].

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The humus content of these soils is different and often reaches relatively high values in upper horizons (at 0.8-1.3%). The amount of total nitrogen, depending on the humus content, ranges from 0.06-0.1%, the C:N ratio varies from 8 to 14, which indicates a relatively weak enrichment of humus with nitrogen. Carbonates depending on texture of the layers, varies from 8.7 to 13.7%. Calcite is predominant in carbonate content. Gypsum is very small (0.1-0.4): pH is weak alkaline and alkaline. The sum of the absorbed bases, even in heavier textured and humic horizons, does not exceed 10-12 mcq. All takyrs soils are strongly and very strongly salinized [2].

N.V. Kimberg (1964; 1974) indicated that the features of environmental conditions (climatic, lithologic-geomorphological, hydrogeological) largely determine the nature of the soil cover of studied region. The Ustyurt in Karakalpakstan is a complex and unique object in the context of climate. Characterizing the peculiarities of the climatic conditions of the desert zone of Uzbekistan, notes that climate change and vegetation leads to a decrease in the total degree of moldiness and biological potential of soils, such as decreasing in biological activity, and, conversely, increased salinity and gypsum enrichment of soils [4,6].

Conservation and improvement of soil fertility, improvement the meliorative conditions of salinized irrigated soils, as well as economical use of irrigation water, especially in conditions of their deficiency, are the main problem of a modern agricultural science. In this respect, a special attention is paid by the research of B.Zhollybekov (2006), in which the effect of various irrigation methods on the meliorative condition, soil fertility and productivity of vegetable crops is determined by the example of irrigated meadow-alluvial salinized soils [2].

As it is known, the meadow soils represent one of the forms of hydromorphic soil formation. They are formed by the active influence of groundwater on soil-forming processes. Development of meadow properties are suggested by the presence of air in the soil and certain

reserve of moisture. The morphological profile of irrigated soils is characterized by the presence of an infantry horizon (An) with a thickness of 28-30 cm. It has a gray or light-gray color, dry or moist, depending on the mechanical composition of the lumpy-cloddy or lumpy-dusty structure, and often there are remnants. In old-irrigated soils, the relief is microwave, the texture is heavy loam, the soil profile is soloistic, the soil-forming rock is alluvium. The thickness of the humus horizon is 25-30 cm, there are small shrubs, kamish, straw, yantak and other weeds. The depth of profile is 230 cm, the depth of groundwater is 230-250 cm, there are annual and dense herbaceous roots of the plants down to the profile [ 1 ].

In more fertile soils of the sicrozem belt, the groups and species composition of the microbial associations is also widely represented. Such soils, possessing high microbiological activity are characterized by optimal combination of air, hydrothermal and food regimes for the crops. The data obtained by T. Kh. Khadzhiev et al. (2000a, 2001) on the studying of various groups of

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microorganisms in the main irrigated soils in the southern part of Kharezms oasis has shown their abundance is markedly higher than in the soils of the northern part [3].

According to H.T. Riskieva (2000), in automorphic and hydromorphic soils of the desert zone and sicrozem belt, prolonged irrigation promotes an increase in the activity of nitrifiers. and in older irrigated soils, a large part of the mineral nitrogen is made up of nitrates. The scientist noted that with increasing irrigation prescription in soils, a decrease in the content and reserves of absorbed ammonium is observed, that the forms of mineral nitrogen compounds to a certain extent characterize the genetic affiliation of soils and can serve as their diagnostic indicators [5].

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