

TRANSFORMATION OF THE SOIL MINERAL MATRIX IN KUBAN RICE AGROLANDSCAPE**T. A. Zubkova¹, O. A. Gutorova^{2,3}, A. Kh. Sheudzhen^{2,3}, Kh. D. Khurum³**¹*Soil Science Faculty, Lomonosov Moscow State University, 12, Leninskie Gory, Moscow, 119991;*²*All Russian Rice Research Institute, 3, Belozernyi settlement, Krasnodar, 350921;*³*Kuban State Agrarian University named after I. T. Trubilin,
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The paper presents the results of studying the properties of the soil mineral matrix of rice agricultural landscapes in Kuban. The total specific surface area and mineral matrix (S) of the soil, as well as the spectrum of the acid centers of the soil mineral matrix (PMM) are determined. The control soils for comparison were the soils of the rainfed and fallow lands. It was established that the mineral matrix transformation was depending on the soil type, the particle size distribution and the duration of rice cultivation. Arable horizons of meadow chernozem and meadow bog soils involved in rice crop rotation did not change in the size of the mineral matrix (S of the soils of rice fields, rainfed lands and deposits was 35–55 m g⁻²). Changes in the mineral matrix were found in the subsoil horizons of the meadow bog clay soil (S = 73–160 m g⁻²), which was associated with heavier soil texture and the intensive development of eluvial and gley processes caused by the soil genesis. Permanent cultivation of rice for 80 years contributed to a decrease in the specific surface area of the mineral and organo-mineral matrix (S = 24 m g⁻²) of the meadow chernozem soil, despite the loamy clay soil texture. This indicates changes in the structural organization of the soils minerals particles in the rice fields.

Keywords: soils of rice agrolandscapes, soil mineral matrix, specific surface area, ammonia thermal desorption spectrum.

