



Ca and Sr in the landscapes of the East Transbaikalia

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It is known that Sr is involved in bone formation, but high levels of this trace element in the environment is associated with the risk of manifestation of chondrodystrophia (Urov Kashin-Beck disease), strontium rickets and bone destruction. The aim of this work was comparative assessment of Ca-Sr relationships in the soil-plant complex of the Urov biogeochemical provinces of Eastern Transbaikalia and "control" areas. The basic research landfills located on the territory of the area between the rivers Argun and Shilka. The study territory belongs to the forest-steppe areas of the High-Amur Midlands. Ca and Sr in soils were determined by X-ray fluorescence spectroscopy. The content of this chemical elements in plants (hay harvest) were measured by means of AAS. It was found that the content of Ca in soils, waters and plants of endemic Urov disease territories is approaching the concentrations of this macroelement in the objects of "background" areas. Sr concentrations are increased in the soil-plant complex of the Urov biogeochemical province and characterized by "spotting". It was found that the most frequently occurring ratio of Ca and Sr in the soils of some areas without the manifestation of osteoarticular pathologies in animals and humans varies from 11 to 236 units (53 ± 24). In soils of Eastern Transbaikalia in the areas of distribution Urov Kashin-Beck disease, this ratio varies from 2 to 98 (36 ± 11). The high content of strontium in the soil of the Urov biogeochemical province correlated with the concentration of this trace element in rocks.