About the forms of lead in soil tailing Dzhida tungsten-molybdenum plant

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Dzhidinsky tungsten-molybdenum plant is located in the western Trans-Baikal in the Buryat Republic. He developed the largest deposits Dzhida ore district from 1934 to 1998. As a result of the plant formed a system of antropogenic landscapes. The greatest danger is the tailings, in which the content of W, Mo, Bi, Pb, Be and other toxic substances exceed the MAC. The most dangerous Pb. Its content in the samples soils selected in sulphide tailings in August 2006, are in the range of 496.01 mg / kg to 2719 mg / kg (MPC_{Pb} lead in soil = 32 mg / kg). Analysis of Pb in plants has shown that the absorption coefficient of its biological plants is independent of content absorption plants share Pb in most cases less than 10%. Pb extraction experiments showed that it is present in the following forms: soluble, exchange, acid, light- and refractory, and easy-difficult-residual. Water-soluble and exchangeable forms of lead are free ions, complexes of lead, lead cations held in the sample due to the weak electrostatic interactions. All samples soil soluble lead content does not exceed 2.5 mg / kg (0.1 - 0.24% of the total). With increasing pH from 5 to 8 decreases the amount of extractable lead: optimum is neutral and weakly acidic medium. The average mobility and bioavailability of lead forms (water-soluble, exchange, acid-soluble, easily oxidized and easily recovers) constitute 3% of the total. The remaining 97% represented inactive and immobile forms.