

A method to forecast the content of mobile forms of heavy metals and microelements in a soil system for effective remediation and use includes sampling, analysis thereof and forecasting the content of microelements (ME) in soil according to the mathematical models taking into account the determined dependencies on the ratio of carbon of humic acids (C_{HA}) and fulvic acids (C_{FA}) with ME of the soil. The value of soil hydrolytic acidity (H_s) in soil samples is additionally determined using organo-mineral and/or mineral, and/or organic fertilizing systems and at anthropogenous pollution with heavy metals (HM) and on the basis of the obtained mathematical models and determined dependencies of diagnostic indicators the forecasted content of mobile forms ME (HM) in the soil, for example for dark grey soil the content of Pb (1), Cd (2), Ni (3), Zn (4):

$$Z_{Pb} = 0.15 - 0.27x + 0.40y \quad (r = 0.71; R^2 = 0.50; F(2.9) = 4.36), (1)$$

$$Z_{Cd} = 0.24 - 0.15x + 0.012y \quad (r = 0.62; R^2 = 0.45; F(2.9) = 2.8), (2)$$

$$Z_{Ni} = -1.1 + 0.61x + 0.5y \quad (r = 0.97; R^2 = 0.94; F(2.9) = 78.5), (3)$$

$$Z_{Zn} = -9.02 + 3.45x + 1.95y \quad (r = 0.86; R^2 = 0.75; F(2.9) = 13.37), (4)$$

where Z_{Pb} , Z_{Cd} , Z_{Ni} , Z_{Zn} are forecasted (calculated) content of mobile compounds of the corresponding metal in the soil, mg/kg; x - the ratio of C_{HA} / C_{FA} ; y - hydrolytic acidity, $\mu\text{mol}/100 \text{ g soil}$; with the spread of the use of the algorithm of the method onto other types of soils.