Modelling the removal of heavy metals from arable soil within the 'atmosphere-plant-soil' continuum

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The predictive models for describing the removal of heavy metals in the soil, which are based on the 'atmosphere-plant-soil' system and reflect the complicated physico-chemical nature of the heavy metals' migration, expressed by coefficients obtained in long-term observations in natural conditions, allow for evaluating long-term concentration of heavy metals in the soil.

The model BALANS evaluates the removal of heavy metals from the arable soil, taking into account the uptake of heavy metals of aerogenic origin by the soil together with the popular soil amendment, their physico-chemical migration and the type of microrelief determining its intensity as well as the absorbed biomass of crops and the removal of heavy metals with crops.

The removal extent of heavy metals (Ni, Cr, Pb, Zn and Cu) from the arable soil in the long-term perspective of up to 200 years was evaluated providing the sustainability projections.