

Elution of Heavy Metals from Granulates Produced from Municipal Sewage Deposits and Fly-Ash of Hard and Brown Coal in the Aspect of Recycling for Fertilization Purposes – Czesława Rosik-Dulewska, Katarzyna Głowala, Urszula Karwaczyńska, Jolanta Robak

Summary

Deposits used as fertilizer bring to soil both biogens necessary for plant growth and other ingredients such as metals, including heavy metals. Knowledge of quantities and rate in which heavy metals are to be released to soil from granulates is important because of their toxic influence on plants (in the case of high metals concentration). This paper presents results of investigation of elution of Cu, Zn, Ni, Cd, Pb and Cr from granulates prepared from municipal sewage sludge, hard coal ash and brown coal ash. Elution to water solution was carried out in static conditions with single-stage and tree-stage extraction. Heavy metal a component of sludge-ash granulates eluted in various quantities, i.e. from trace for cadmium to 9.26–9.53 mg/kg of d.m. for zinc. Among the soluble forms of metals the most mobile are (in decreasing sequence): Cu > Pb > Zn > Ni in granulates containing brown coal ash and Cu > Pb > Ni > Zn in granulates contain hard coal ash.