DISPOSING OF BIOLOGICALLY HARDLY DEGRADABLE ORGANIC POLLUTANTS IN SOLID MATRICES

ZNEŠKODNĚNÍ BIOLOGICKY TĚŽKO ROZLOŽITELNÝCH POLUTANTŮ V PEVNÝCH MATRICÍCH

Vít Matějů

Envisan-GEM, a.s., Department of Biotechnology, Radiová 7, 102 31 Praha 10, Czech Republic, e-mail: envisan@mbox.vol.cz

Abstract:

There exist many organic pollutants, which are not readily completely biodegraded. These could be polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), explosives (like RDX, HMX, TNT) and many more. One way how to reduce their risk for environment is their biotransformation and following bioimmobilization or biostabilization. In this case the pollutant is not completely destroyed, but it is transformed to forms, which are less toxic and pose reduced risk to environment. Most common mechanism is sorption of biologically transformed molecules of pollutant to humic substances produced by composting or similar process.

We employ combination of composting and biostabilization for treatment of soil contaminated with PAHs in full-scale. The reductions of toxicity as well as concentration of individual PAH were very efficient.

Keywords:

organic pollutant, PCB, PAH, explosive, bioimmobilization, biostabilization, composting