ABSTRACT

The aim of the study was to determine how fast the hygienization process of sewage sludge used for lawns in Białystok takes place. The study also included the determination of concentrations of Cd, Cu, Cr, Ni, Pb, and Zn and their relations with biological factors in studied soil samples. In the tested samples, neither Salmonella sp., nor invasive nematode eggs belonging to the genera Ascaris, Trichuris, and Toxocara were found. Moreover, a significant reduction in microbiological indicators was determined, that is psychrophilic and mesophilic plate count bacteria, total coliforms and fecal coliforms bacteria as well as Clostridium sp. and Enterococcus sp., to the level corresponding with control sectors. On the basis of the studies, one could observe a lower content of certain heavy metals such as Cd, Ni, Zn, and Pb in 2012 compared with 2011, while the content of chromium and copper in the soils increased significantly in 2012. All studied heavy metal contents in soil in 2011 and 2012 were in the acceptable level for urban soil defined in the regulation of the Polish Ministry of the Environment.

Keywords: Sewage sludge; Soil; Heavy metals; Sanitary indicators; Sediment management

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