

Review of the Use of Bioindication Method for Appraisal of the State of Urban Soils in Two Areas of Saint Petersburg, Russia

K. A. Gyekye

Department of Geography and Resource Development, P. O. Box LG 59, Legon, Ghana

Abstract

The paper examines the use of culture of *Paramecium caudatum* (infusoria) as an indicator to determine soil toxicity of urban soils within the areas of Vasileostrovsky and Elagin Ostrov in St Petersburg, Russia. The results of the study indicated that urban soils of Vasileostrovsky were toxic; index of soil toxicity (T) ranged within the limits of 0.27–0.77. Results of tested soils from Elagin Ostrov showed a significant negative index of soil toxicity, which ranged from –0.86 to –1.26, specified that soils were not toxic. Comparing results from this study to the study conducted on ecological zoning of Vasileostrovsky, on the basis of green plants reaction to complex pollutants, showed wide disparities between the two bioindication approaches, which was attributed to specific biological characteristics of species tolerance (test organisms) and their levels of sensitivity to complex ecological factors. In view of the growing need to conserve soils in urban areas the investigation, which used *paramecium caudatum* as bioindicator to detect soil toxicity, will promote monitoring of state of soils in developing cities.