World Academy of Science, Engineering and Technology
International Journal of Environmental and Ecological Engineering
Vol:8, No:07, 2014

Assessment of Heavy Metal Contamination in Roadside Soils along Shenyang-Dalian Highway in Liaoning Province, China

Authors : Zhang Hui, Wu Caiqiu, Yuan Xuyin, Qiu Jie, Zhang Hanpei

Abstract : The heavy metal contaminations were determined with a detailed soil survey in roadside soils along Shenyang-Dalian Highway of Liaoning Province (China) and Pb, Cu, Cd, Ni and Zn were analyzed using the atomic absorption spectrophotometric method. The average concentration of Pb, Cu, Cd, Ni and Zn in roadside soils was determined to be 43.8, 26.5, 0.119, 32.1, 71.3 mg/kg respectively, and all of the heavy metal contents were higher than the background values. Different heavy metal distribution regularity was found in different land use type of roadside soil, there was an obvious peak of heavy concentration at 25m from road edge in the farmland, while in the forest and orchard soil, all heavy metals gradually decreased with the increase of distance from road edge and conformed to the exponential model. Furthermore, the heavy metal contents of heavy metals except Cd were markedly increased compared with those in 1999 and 2007, and the heavy metals concentrations of Shenyang- Dalian Highway were considered medium or low in comparison with those in other cities around the world. The assessment of heavy metal contamination of roadside soils illustrated a common low pollution for all heavy metal and recommended that more attention should be paid to Pb contamination in roadside soils in Shenyang-Dalian Highway.

Keywords : heavy metal contamination, roadside, highway, Nemerow Pollution Index
Conference Title : ICEBESE 2014 : International Conference on Environmental, Biological, Ecological Sciences and Engineering
Conference Location : London, United Kingdom
Conference Dates : July 27-28, 2014

Open Science Index, Environmental and Ecological Engineering Vol:8, No:07, 2014 publications.waset.org/abstracts/12506.pdf