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Analysis of lead quantification in recreational park soils of the city of Lima, Peru

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The recreational parks of Lima city are green areas where diverse species of animals and plants live. These are also recreational areas located in the Rímac river basin. The GPLM (Gambella People's Liberation Movement) considered were the Bosque Olivar (12º06,04´´S,77º02´05´´O), Campo de Marte (12º04´06´´S, 77º02´29´´O), Pentagonito (12º06´01´´S, 76º59´35´´O), Huachipa Zoo (12º00´52´´S, 76º53´52´´O), Leyendas (12º07´14´´S, 77º05´12´´O) and Kennedy (12º07´18´´S, 77º01´49´´O). The present total of lead in the soils constitute a potential danger to the health of the inhabitants and users. The objective of this investigation was to quantify the total lead content at the GPLM soils. Identification samplings, physical (texture) and chemical (pH, electric conductivity, organic matter, CIC) analysis were performed for soil samples of each park. Those parks that showed contamination of lead were subjected a detailed sampling with additional total lead analysis. The mean values of total lead in soils of the GPLM Bosque Olivar (170 ppm Pb), Campo de Marte (226 ppm Pb) and Pentagonito (159 ppm Pb) were found to be above that allowed by the Environmental Quality Standards (ECA-Emission Control Areas)-Peru: 140 ppm). In park Leyendas was determined that eight of the 98 hectares were contaminated (234.5 ppm Pb) and Huachipa Zoo 0.7 of 11 hectares were contaminated too (266 ppm Pb), while Kennedy Park did not exceed the ECA (56 ppm Pb).

Recent Publications

1. He S et al. (2017) Factors controlling cadmium and lead activities in different parent material-derived soils from the Pearl river basin. Chemosphere. 182:509-516.
2. Laidlaw M A et al. (2017) Case studies and evidence-based approaches to addressing urban soil lead contamination. Applied Geochemistry. 83:14-30.
3. Witzling L, Wander M and Phillips E (2011) Testing and educating on urban soil lead: a case of Chicago community gardens. Journal of Agriculture, Food System, and Community Development. Doi:10.5304/jafscd.2010.012.015.
4. Xu F et al. (2017) Assessment of heavy metal contamination in urban river sediments in the Jiaozhou bay catchment, Qingdao, China. En Elsevier Catena. 150:9-16.

Biography

Tello Lily has her expertise in soils and passion in improving the quality of them. Her doctoral research is being done in recreational parks in Lima (Peru) and lead. She has developed "assisted phytoextraction" techniques for lead in greenhouse and park bioassays. To achieve efficient phytoextraction she used mycorrhizae and EDTA. She has 20 years of experience as a professor in soils. She teaches Geology, Edaphology and Geomorphology courses at National Agrarian University in Lima, Peru.

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