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ABSTRACT BOOK

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ASSESSMENT OF HEAVY METAL CONTAMINATION IN TERRACES FOR PUBLIC USE RECOVERED IN THE CITY OF PALERMO AND IN AGRICULTURAL TERRACES

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The contamination by heavy metals in the soil is nowadays considered an indicator of environmental pollution caused by to several factors, such as waste disposal, industrial discharges and the use of irrigation water. Developed in collaboration with *SO.GEST* Ambiente Laboratory, in Palermo, this study had as a purpose to monitor the levels of heavy metals - Cd, Cr, Fe, Mn, Pb, Zn -both in public lands and in agricultural terrains. All the soil samples collected have been subjected to an acid extraction process by using HCL and eventually to a mass spectrometer-based analysis for the quantitative/qualitative determination, specifically by the technique of flame atomic absorption spectrophotometer (FAAS) and graphite furnace (GFAAS). From the elaboration of the results, it emerged that all the soils in the city of Palermo feature heavy metals, with the predominance of Cd, Cr and Zn, respectively in the percentages of 5.69%, 64.06%, 1.40% on 60 soil samples analyzed, what is surely due to vehicular traffic, the use of irrigation water and also the use of fertilizers. Lead (Pb), instead, has not been detected in all public grounds, probably due to the switch-over to the lead-free gasoline, which has reduced the inflow of this metal. Lastly, the confrontation between the two types of soil showed a higher rate of contamination by heavy metals in the agricultural grounds, thus demonstrating how today the use of plant protection products has gained the upper hand, in order to increase agricultural production. In particular, the percentages found are the following: Cd 6. 37% Cr 210.06%, Fe 20.42, Mn 9.35%, Pb 125.1%, Zn 2.04 on 60 samples of soil. Although all metal concentrations have fallen within the limit values of the law, this will not exclude the fact that they are present into the soil and that even though in minimal concentration they are toxic to the man by contact, by ingestion or by respiratory action.