

عنوان مقاله:

Heavy metal concentrations in the outdoor and indoor air of high-traffic areas in Tehran, Iran

محل انتشار:

مجله پیشرفت در تحقیقات بهداشت محیط, دوره 8, شماره 1 (سال: 1399)

تعداد صفحات اصل مقاله: 14

نویسندگان:

Azam Mehdipour - *Department of Environment Engineering, North Tehran Branch, Islamic Azad University, Tehran, Iran*

Mojgan Zaeimdar - *Department of Environment Engineering, North Tehran Branch, Islamic Azad University, Tehran, Iran*

Mohammad Sadegh Sekhvatjou - *Agriculture and Natural Resources Department, Islamic Azad University, Ahwaz Branch, Ahwaz, Iran*

Sayed Ali Jozi - *Department of Environment Engineering, North Tehran Branch, Islamic Azad University, Tehran, Iran*

خلاصه مقاله:

Tehran is a polluted metropolitan and the capital of Iran, where heavy traffic and excessive energy consumption (especially gasoline) are the major sources of heavy metal emissions. This study aimed to investigate the variations in heavy metal concentrations on the aerosols of the outdoor and indoor environments in the high-traffic regions of Tehran. This was a descriptive, applied research in terms of methodology. Six internal-external stations were specified in three high-traffic regions. Sampling was performed in six replications for each station during fall 2018(n=36). After the extraction of the heavy metals from the fiberglass filters using acidic digestion based on the ASTM method, their concentrations were measured via ICP-OES. Data analysis was performed in SPSS using MANOVA. According to the results, regions 2, 3, and 15 had the highest traffic in Tehran during the study, with the traffic rate estimated at 25-27% hours per day on average. A significant difference was observed between the outdoor and indoor regions in terms of heavy metal concentrations ($P<0.05$). The order of the mean concentrations of heavy metals in the open spaces was as follows: Al> Fe> Pb> Mn> Cu> Zn> Cr> As> Ni> Cd. Aluminum and cadmium had the highest and lowest concentrations, respectively. In addition, the high concentration of lead and heavy traffic was alarming in Afsariyeh Street (region 15). Considering the adverse effects of pollution on the health of citizens, serious measures should be taken to control traffic in Tehran. Keywords: Heavy metals, Traffic volume, Tehran metropolitan, Indoor and outdoor environment

کلمات کلیدی:

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