عنوان مقاله:

Ecological Risks Attributed to the Heavy Metals Pollution of Dust Settled on the Surface of Coastal Roads along the Persian Gulf

محل انتشار:

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خلاصه مقاله:

Introduction: Heavy metals (HMs) accumulated in the road dust may be transferred to the surrounding land and water bodies and pose ecological risks. Hence, such pollution should be considered, especially in coastal roads. This study focuses on the HMs pollution of dust settled on the surface of coastal roads along the Persian Gulf in Bandar Abbas city. Materials and Methods: In this study, road dust samples were collected from ۱۳ points in coastal roads and analyzed by ICP-OES for the measurement of As, Cd, Co, Cr, Cu, Mn, Ni, and Pb. Based on the HMs contents of dust, pollution, and ecological risk indices, including contamination factor (CF), modified pollution index (MPI), and modified ecological risk index (MRI) were calculated. Results: Among the studied HMs, Cu (۴.۷۳) showed the highest CF value. The levels of MPI showed that the road dust was strongly polluted by HMs (۴.۰۲), but it was mainly contributed by a low toxic metal (Cu). Therefore, the mean value of MRI was ۱۳۲.۳, indicating the low ecological risk of such pollution. Note that the MRI value was > ۱۵۰ in some sampling points, indicating moderate ecological risk. Conclusion: This study showed that the road dust along the Persian Gulf coastline is polluted to different levels of the studied HMs and may pose various levels of ecological risks. The current level of HMs pollution in the study area was not significantly high. However, high pollution levels in the west roads should not be overlooked.

کلمات کلیدی:

Environmental Monitoring, Metals, Heavy, Persian Gulf, Ecological Risk, Persian Gulf, Risk Assessment.