

Presence of High Concentrations of Toxic Metals from the Collected Soil Samples Due to Excessive E-Waste Burning in the Various Areas of Moradabad City, U.P India

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Abstract : Moradabad is a small town in the Northern area of Uttar Pradesh, India. It is situated on the bank of river Ramganga which is also known as 'Brass City of India'. There is eventually increase in the environmental pollution due to uncontrolled and inappropriate e-waste burning (recycling) activities which have been reported in many areas of Moradabad. In this paper, analysis of toxic heavy metals, causing pollution to the surrounding environment released from the e-waste burning and much other recycling process. All major e-waste burning sites are situated on the banks of the river which is burned in open environmental conditions. Soil samples were collected from seven (n=3) different sites including control site, after digestion of soil samples using triacid mixture, analysis of different toxic metals (Pb, Ar, Hg, Cd, Cr, Cu, Zn, Fe, and Ni) has been carried out with the help of instrument ICP-AAS. After the study, the outcome is that the soil of those areas contains a relatively high level of the toxic metals in order of Cu>Fe>Pb>Cd>Cr>Zn>Ar>Hg. The concentration of Cd, Pb, Cr, Ar and Zn (the majority of samples experimentally proved) exceeded the maximum standard level of WHO. Sequentially this study showed that uncontrolled e-waste processing operations caused serious pollution to local soil and release of toxic metals in the environment is also causing adverse effect on the health of people living in the nearby areas making them more prone to various harmful diseases.

Keywords : brass city, environment pollution, e-waste, toxic heavy metals

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