

ASSESSING TOXIC METALS CONTAMINATION IN SOIL, WATER AND PLANT BODIES AROUND AN INDUSTRIAL BELT

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ABSTRACT

Surface soil (46 nos.), water (32 nos.) and plant/crop (34 nos.) samples were collected around Vapi industrial belt, Gujarat (India) in order to assess toxic metal contamination in surface soil, water sources and plant bodies. The results revealed that about 48, 100, 6 and 6% soils belonged to 'deficient to marginal' category with respect to Fe, Mn, Cu and Zn, respectively. The content of DTPA - Pb, Co, Ni and Cd in soils were also below permissible limit / maximum threshold value. Only few water sources contained Fe, Mn, Cu, Zn, Ni and Cd metals and that too within permissible limit. BOD and COD of water sources were above prescribed limit. Pb and Co content of all water sources were within maximum permissible limit and thus were safe. Fe in all plant/crop samples, Cu in five, Zn in nine, Pb in nineteen, Ni in fourteen and Cd only in six plant/crop samples were found to cross the maximum permissible limit and as a consequence might become toxic / harmful.

KEYWORDS: Toxic Metals, Contamination, Soil, Water Sources, Plant Body, Industrial Belt