Theme 7: Lakes, rivers, estuaries: water quality, biotic resources, sustainable management

T7_Oral_13

IMPACT OF HEAVY METAL CONTAMINATION OF TUMKUR AMANIKERE LAKE ON SOIL AND CULTIVATED VEGETATION

C.R.Ramakrishnaiah[1] C.Sadashivaiah[2] G.Ranganna[3]

[1] PG Studies in Environmental Engineering, Department of Civil Engineering, BMSCE, Bangalore –560019, India,

[2] Sri Shivakumara Mahaswamy College of Engineering, Bangalore Rural District- 562132,

[3] 3UGC-CSA, Department of Mathematics, Central College Campus, Bangalore University, Bangalore- 560 001, India

*Correspondence to Dr. C. R. Ramakrishnaiah. E-mail: rama_bmsce@yahoo.com

The aim of this study is to assess the extent of heavy metal contamination of soil and vegetation due to irrigation with sewage-led lake water on agricultural land. Samples of water, soil and crop plants have been analysed for heavy metals, viz. Fe, Mn, Cu and Z using atomic absorption spectrophotometry. The results show the presence of heavy metals in banana, radish and spinach, beyond the limits of Indian standards. It was found that the average concentration of metals in the surface soils from the catchment and the command area of the lake are many folds higher than the medium values. Transfer factor for Zn is high compared to other metals in all types of vegetation with highest transfer factor value in beans. The study reveals that the irrigation with sewage-contaminated water containing variable amounts of heavy metals leads to increase in concentration of metals in the soil and vegetation.