TRANSPORT AND FATE OF ZINC PRESENT IN SOIL, GROUND WATER AND PLANTS IN THE AREAS SURROUNDING THE ZINC SMELTER

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Abstract: Industrialization and urbanization resulted in pollution of soils. Earlier, the soil chemistry mainly dealt with problems related to plant nutrients and their scarcity. But in the recent years the emphasis in soil metal chemistry switched to toxic metal pollution problems because of excessive inputs of various anthropogenic sources such as industrial effluents, sewage and sullage, solid waste from different activities etc. More recent concern is related to contaminated soil sites. Solutions to such problems require a multi disciplinary approach during investigations, assessment and consideration of remedial action. Treatment of contaminated soil represents complex and challenging problems. The fate of chemicals in the aquatic environment is determined by two factors, namely their reactivity and the rate of their physical transport through the environment. The transport and fate of inorganic chemicals may differ from organic chemicals. Organic compounds may change their nature and transform and finally degrade depending on different conditions in the soil including microbial action and aging. Inorganic chemicals may change their nature and transform but do not degrade and the total heavy metal is conserved. So heavy metal pollution is a great problem than organic chemicals as they heavy metals are highly persistent in nature. People in three villages in the back side of a zinc smelter in Visakhapatnam, are suffering by the liquid effluent discharge from zinc smelter as the liquid effluents contaminated all the drinking water sources in those three villages. Veterinary doctors also observed that the cattle in that region are suffering from some peculiar diseases. We have has taken up a comprehensive study on “Effect of the discharge of effluents from Zinc Smelter on the soil, ground water quality and the plants in the surrounding areas”. As a part of this invited lecture, the studies we carried out, on the above aspect will be presented and discussed.