Mobility of Adsorbed Zinc in Sandy Loam and Clay Loam Soils as Influenced by *Alkylbenzene Sulphonate Surfactant*

B Sathyanarayana and B Narasimhulu

Department of Chemistry, S G S Arts College, S V University, Tirupati 517 502, Andhra Pradesh

ABSTRACT

Release of zinc into the soils as a result of agricultural and industrial activities may pose a serious threat to soil and water pollution. Laboratory soil column experiments were conducted during 2011 to determine the extent of Zn leaching from soil percolated with influent that contained the surfactant alkylbenzene sulphonate. The results of the experiment showed that the mobility of zinc in the two soils namely sandy loam soil and clay loam soil treated with the influent alkylbenzene sulphonate decreases and is also inversely proportional to the concentration of alkylbenzene sulphonate. The concentration of Zn in the column effluents soils percolated with 0.01*M* KCl in 0.01% alkylbenzene sulphonate and with 0.01M KCl in 0.05% alkylbenzene sulphonate were significantly less than those percolated with 0.01*M* KCl with the same volumes of effluents collected. This clearly indicates that the anionic surfactant alkylbenzene sulphonate which is negatively charged have strong affinity for Zn^{+2} in soils and stabilized in soils and thus reduced the mass of zinc leached from the soil columns. Further, it is observed that the characteristics of soil components related to Zn adsorption, affected the adsorption as well as desorption process and subsequent mobility of Zn in soil environment..

Key words : Alkylbenzene sulphonate, Leaching, Mobility, Zinc.