**Abstract**

Plant and soil samples were collected from areas surrounding a cement factory. As the vegetation around the cement factory was predominated by *Brachiaria ramosa* (*B. ramosa*) and due to its ecological importance, it was evaluated for its metal accumulation capacity. An assessment of the plant and soil samples for metals such as Zn, Pb, Cd and Hg indicated that *B. ramosa* accumulated significant amounts of Pb and Zn in its shoot and root tissues several folds higher than their available concentration in the soil, hence, designated as an accumulator of metals. In the shoot, Pb accumulation of *B. ramosa*, was found to be of great importance as it can be a promising plant for the remediation of Pb contaminated soil.