B-54 : A study on use of *Azolla – Anabaena* association to treat wastewater with special reference to some selected heavy metals

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The main objective was to study the Chromium (Cr) ions uptake ability of growing *Azolla pinnata* var. *imbricata* species, to develop a method to purify industrial wastewater containing Cr ions.

This study was done in the glasshouse to prevent the addition of rain water and excess evaporation. Experiment was planned and conducted according to randomized complete block design. There were 4 treatments and each was replicated 3 times. Potassium dichromate solution ($K_2Cr_2O_7$) was used as Cr standard. The 4 treatments were: 00, 20, 35 and 50 mg/l Cr concentrations. The medium used was nutrient solution (Mitchel and Livington, 1968) without nitrogen compounds. In addition, 12 cm^3 of soil extract (500g low nitrogen garden soil with 15g $CaCO_3$ in 500 cm^3 distilled water) was used to each replicate in order to provide micro-nutrients. 6l of medium and 50g of *Azolla* were added to each treatment. pH of the medium was varied between 5.8 – 6.0. Constant water level was maintained by addition of distilled water. Two weeks after, *Azolla* fronds were dry-ashed and analysed by Atomic Absorption Spectrophotometer (AAS). Tank water was filtered and analysed by AAS.

The results show that *Azolla* uptakes Cr at 0.05 significant level. According to Duncans' Multiple Range Test, all treatments were significantly different at 0.05 significant level. Therefore, it is possible to use *Azolla* to purify wastewater containing Cr ions.