Phytoremediation of mixed metals (cadmium and lead) from wastewater by Eichhornia crassipes

ABSTRACT

The present study demonstrated the phytoremediation potential of E. crassipes for removal of mixed metals cadmium (Cd) and lead (Pb) within 14 days period. E. crassipes were grown in FSSA's lake water and added with 1 mg/L and 3 mg/L of mixed metals (Cd+ Pb). The tolerance of E. crassipes in removing mixed metals at different concentration were photo recorded and the toxicity evidence was observed along the experiment. The results showed that removal of mixed metals at 1 mg/L was highest in Pb with 20.3% followed by Cd 4.0%. E. crassipes exposed to higher concentration at 3 mg/L showed removal efficiency of Pb with 10.7% while Cd with 2.6% respectively. It was noted that the accumulation of heavy metal in plant parts were ranged from 17.1 mg/kg- 83.17 mg/kg for Cd while for Pb the accumulation was observed with 75.7 mg/kg to 1090.1 mg/kg. The distribution pattern of heavy metals was found in order of roots>leaves>stems. E. crassipes significantly experienced some toxicity effects as the concentration increased along 14 days of the treatment.