



RESEARCH PAPER

Phytoremediation of *Ceratophyllum demersum* L. on arsenate and cadmium exposure

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In the present study plants of *Ceratophyllum demersum* L. was collected and grown for six months in large hydrophobic tubes. The effect of zinc ion concentration was studied at different concentration on plant; for 7 days in 10 per cent Hoagland media. After day 1 no significant effect was observed on plant for all concentration of zinc. After day 2, 3 and 4 change in colour from green to yellow was observed with different colour intensity. It was observed that after day 5, 6 and 7 the leaves of *Ceratophyllum demersum* L. become black in colour, the intensity of blacking in colour was increased as concentration of zinc ion increased. The plant showed maximum accumulation of cadmium after 7 day at 20 μ M concentration. The maximum level of thiol compound was observed at 10 μ M after 3 days. The maximum level of cysteine synthetase was observed at 10 μ M after 3 days. The maximum level of glutathione-S-transferase was observed at 10 μ M after 4 days. The maximum level of glutathione reductase was observed at 10 μ M after 4 days. The plant showed maximum accumulation of arsenic after 7 day at 20 μ M concentration. The maximum level of cysteine concentration was observed at 15 μ M after 4 days. The maximum reduced glutathione concentration was observed at 10 μ M and 20 μ M, respectively.

Key words : *C. demersum*, Arsenat, Thiol metabolism, Cysteine synthase, Glutathione S-transferase, Glutathione reductase

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