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Amelioration of lead toxicity by cyanobacteria *Scytonema* and *Hapalosiphon*

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SUMMARY

In the present investigation a comparative study has been made with free and immobilized *Scytonema* sp. and *Hapalosiphon* sp. cells subjected to lead treatment. These Immobilized cells gave enhanced growth and nitrate reductase activity as compared to free cells without added lead (Control). In sublethal doses of lead, immobilized cell were able to over come the Pb toxicity to considerable levels. In fact, the growth and nitrate reductase activities were stimulated with added lead under immobilized conditions has compared to Pb treated free cells and also to investigate whether immobilization can help retain nitrate reductase activity if nitrate concentration as increased in the medium and also mitigate lead toxicity. Between both the cyanobacteria *Scytonema* sp. was more efficient to remove Pb toxicity. The observations of the present study clearly demonstrate the protective effect of immobilization in *Scytonema* sp. *and Hapalosiphon* sp. against Lead toxicity. With this aim the nitrate reductase activity was compared in free and immobilized cells of two heterocystous filamentous free-living cyanobacteria *i.e. Scytonema* sp. and *Hapalosiphon* sp., isolated from paddy fields and amelioration of lead metal toxicity.

Key words : Cyanobacteria, Lead, Immobilization, Nitrate reductase, Amelioration.