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Comparative Study of Lead Removal by *Mirabilis jalapa* and *Datura innoxia*

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ABSTRACT

A study was carried out to investigate the potential of *Mirabilis jalapa* and *Datura innoxia* for phytoremediation of lead contaminated soils. Experiments were carried out in order to investigate the effect of lead on growth, leaf pigments and metal accumulation ability of selected plant species. The experiments consisted of 5 treatments in which lead concentration varied from 0 - 100mg/kg-1 [0ppm(TC1), 25ppm(TC2), 50ppm(TC3) 75ppm(TC4), and 100ppm(TC5)]. Selected plant species were grown for a period of 45 days after seedling in pots containing 5 kg of soils. Growth performance, leaf pigments (chlorophyll a, chlorophyll b and carotenoids) and metal accumulation were estimated after 45 days in root and shoot of plant using AAS. Lead concentration in soil after phytoremediation by *Datura innoxia* and *Mirabilis jalapa* were 5.59, 9.83, 5.89 and 10.98; 4.50, 8.99, 11.50 and 19.6 in TC1, TC2, TC3 and TC4 soils respectively. Concentration of lead in soil in all treatments after phytoremediation by *datura innoxia* was decreased between 80-90% and in *Mirabilis jalapa* it was 72-78%. Results indicated that both plants species could be effective accumulators for phytoremediation of lead whereas, the potential of *Datura innoxia* was more than *Mirabilis jalapa* for phytoremediation of lead contaminated soils.

Keywords: *Datura innoxia*, translocation factor, AAS, leaf pigments.
