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Influence of lead applications and biofertilizer (phosphorine) on vegetative growth and chemical composition of *Sterculia acerifolia* L. seedlings

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Abstract : The experimental trials were carried out during two successive seasons, 2014 and 2015 at green house of the National Research centre , Cairo, Egypt. The purpose of this study is to investigate the influence of lead concentrations (0, 30, 60 and 20ppm) and Phosphorine Biofertilizer (0.10 gm/pot) on vegetative growth and chemical composition of *Sterculia acerifolia* L. Lead at low concentration (30ppm) increased all growth parameters and all chemical constituents values. But lead at high concentrations (60 and 90 ppm) decreased all growth characters (plant height,number of leaves, length of roots, stem diameter, fresh and dry weight of leaves, stems and roots. On the contrary, all the previous characters as well as phosphorus %, uptake of phosphorus and potassium and carbohydrates % increased by inoculating plants by phosphorine compared with the control and other treatments lead at 60 ppm gave the highest value of pigments content (chlorophyll (a), (b) and carotenoids. Additionally, all interactions treatments increased growth characters, nitrogen %, phosphorus %, potassium %, lead ppm and uptake of N, P, K compared with control and high concentrations of lead (60 and 20 ppm).
It could be recommended to use lead concentration up to 30 ppm to induce the growth characters and chemical constituents and to inoculate plants grown in regions polluted with lead with phosphorine to overcome the hazardous and destructive effects of lead high concentrations.

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