

Growth and Antioxidant Responses in *Jatropha curcas* Cotyledons under Lead Stress

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Jatropha curcas embryos were grown *in vitro* to observe the effects of lead on cotyledon responses. The cotyledon biomass increased initially and then decreased with increasing lead concentration. The SOD activity increased gradually up to 200 μM and then decreased. The POD activity showed a similar trend. The CAT activity was increased at all lead concentrations, the highest activity being observed at 200 μM . However, the PAL activity was inhibited significantly except for 100 μM . Analysis by electrophoresis suggested a significant correlation between lead concentration and patterns of SOD, POD and CAT isoenzymes, and these results were consistent with changes of the antioxidant enzyme activities as assayed in solution.

Key words: Heavy Metal Stress, ROS-Scavenging Enzymes, *in vitro* Embryo Culture, Defensive Mechanism of Plant