Abstract Template

Title: Sodium nitroprusside mediated reduced oxidative damage under Chromium stress in *Sesbania grandiflora*, L.Pers

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Abstract Body (up to 250 words)

The present study investigated the protective effect of sodium nitroprusside on chelator assisted chromium induced oxidative stress response and physiological and biochemical changes in the leguminous plant, *Sesbania grandiflora*, L.Pers. Increased heavy metal (Chromium) threat to the soil atmosphere due to its abundance utilisation in the tanning, electroplating and steel industries causes a serious concern on human health due to the consumption of crops grown on such contaminated soils. Preliminary germination studies were conducted to find the suitable concentration of chromium and EDTA for subsequent pot trials. Soil was spiked with chromium and EDTA and SNP was supplemented exogenously by foliar spray. Morphological, Physiological and structural parameters were evaluated for the protective role of exogenous nitric oxide against the chelator mediated chromium uptake on the plant. Membrane lipids and fatty acid was also studied. In the presence of excess chromium and EDTA, the plant suffered from reduced height and biomass with biochemical parameters that were altered, which were minimised in the presence of SNP. Structural changes due to chromium stress were reduced in the presence of nitric oxide. Membrane lipids and fatty acid damage due to the excess metal also decreased in the presence of SNP. Thus, exogenous application of nitric oxide had a positive effect in alleviating the oxidative stress damage to the plant due to chromium uptake.

I. Image:



II. Reference:

1. Chalapathi Rao, A.S.V., Reddy, A.R. (2008), Glutathione reductase: a putative redox regulatory system in plant cells. in: Khan, N.A., Singh,S., Umar,S (Eds.), Sulfur Assimilation and Abiotic Stresses in Plants. The Netherlands, pp. 111-147.

2. Israr, M., Sahi, S., Datta, R., Sarkar, D. (2006),"Bioaccumulation and physiological effects of mercury in *Sesbania drummondii*', *Chemosphere*,Vol 65, pp.591-598.

3. Lestan, D., Luo, C.-L., and Li, X.-D. (2008). "The use of chelating agents in theremediation of metal-contaminated soils: A review", EnvironmentalPollution, Vol 153, pp. 3-13.

III. Biography:

Subhashree Venugopal has completed her PhD at the age of 30 years from University of Madras .She is an Associate Professor of SBST, VIT, a premier Engineering and Technology organization. She has published more than 20 papers in reputed journals.

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