Where:  room (2.01.02) in the BSE Building
When:  4:00 PM – 5:00 PM on February 9, 2007

Snack and drinks will be served

Speakers:  Dr. Rupali Datta, Assistant professor, UTSA
Mr. Syam Sundar Andar, PhD student, UTSA

Dr. Datta’s Topic: Role of Chelating Agents in Enhancing Lead Uptake by Vetiver Grass (Vetiveria zizanioides L.) from Lead-Based Paint Contaminated Residential Soils

Lead based-paint is the most significant source of lead exposure among children in U.S. Preliminary results from a soil survey of houses with lead-based paint in San Antonio, TX and Baltimore, MD showed that these soils were highly contaminated with lead. Experiments to develop a low-cost and environment-friendly Phytoremediation model for extraction of soil lead is in progress in the EGL. A fast-growing, high biomass grass, vetiver (Vetiveria zizanioides L.) is being used along with chelating agents such as EDTA and EDDS to enhance phytoavailable lead in soil solution and plant uptake. This project is funded by the Department of Housing and Urban Development (HUD).

Mr. Andra’s Topic: Involvement of Phytochelatins in Lead Accumulation and Tolerance in Vetiver Grass

Physiological, biochemical and molecular mechanisms involved in uptake, tolerance and accumulation of lead in plants are also being investigated in the EGL. Results obtained indicate that Vetiver grass can tolerate high concentrations of lead with no toxic physiological effects. Heavy metal tolerance in plants is conferred by Phytochelatins (PCs), a class of post-translational synthetic peptides; which chelate, detoxify, and reduce cellular free metal ion concentrations by forming PC-metal complexes. Experiments were conducted to elucidate if PCs were involved in metal detoxification in vetiver grass using high pressure liquid chromatography-electrospray ionization mass spectrometry (HPLC-ESI-MS). This study provides evidence of the role of phytochelatins in the tolerance of lead by Vetiver grass.