CHAPTER 16

ENVIRONMENTAL STUDIES

Doctoral Theses

183. KANCHANA DEVI (K.)
Investigations on Cyanide Producing Pseudomonad Bacterial Species and Their Potential for Application Against Termite Ontotermes Obesus.
Supervisor : Dr. David Kothamasi
Th 19094

Abstract

Investigates HCN producing bacteria can be effective against soil borne insect pests like termites. O. obesus is used as a model termite species. O. obesus is an important pest of the Indian subcontinent, causing extensive damage to major agricultural crops and forest plantation trees. The study demonstrated that HCN producing rhizobacteria can be effective biocontrol agents against termite O. obesus under in-vitro conditions. Further the finding indicated that cyanide poisoning is the main mechanism by which the HCN producing bacteria are killing the termite O. obesus. and finally it indicates that sequence information can be used to select HCN producing bacterial species that are most suitable as biocontrol agents for a particular habitat.

Contents

184. RAU (Nupur)

Functional and Taxonomic Diversity Among Rhizobacteria of Saccharum Ravennae and Cynodon Dactylon from Fly Ash Dumps of Delhi and Their Potential to Promote Plant Growth in Fly Ash.

Supervisors : Sh. Radhey Shyam Sharma and Vandana Mishra

Th 19009

Abstract

Assesses the functional and taxonomic diversity of rhizobacteria of Saccharum ravennae and Cynodon dactylon colonizing Indraprastha and badarpur fly ash dumps, the variations in plant growth promoting traits and tolerance to different heavy metals among rhizobacteria and to test the efficacy of bacterial consortia in the establishment of S. ravennae in fly ash and to analyze the effect of selected multi-metal tolerant rhizobacterial strains on the growth and heavy metal uptake by Zea mays grown in fly ash.

Contents

185. SINGH (Kavita)

Efficacy of Synthetic merB Gene as Selection Marker.

Supervisor : Prof. P. Pardha Saradhi

Th 19010

Abstract

Evaluates potency of a synthetic gen for organomercury lyase designated as the merBps gene to effectively express in model plant, tobacco (Nicotiana tabcum L. Var. Petit Havana) and as a positive conditional marker gene with phenyl mercury acetate (PMA) as selection agent in comparison with the nptII gene/ kanamycin selection system. Efforts are also made to evaluate feasibility of using the merBps gene/PMA as an ecologically viable and simple selection marker system as an ecologically viable and simple selection marker system as an alternate to the prevailing most prominently used marker systems.

Contents

186. SRIVASTAVA (Swati)
Identification of Genetic Signatures in High Altitude Stress.
Supervisor : Prof. P. Pardha Saradhi
Th 19093

Abstract

Identifies and categorizes hypoxia responsive genes using microarray gene-expression profiling and computational data analysis algorithms. The findings presented in the study demonstrated for the first time that the genes such as endothelin coverting exzymel, NADPH oxidase 1, glyceraldehyde-3-phosphate dehydrogenase, pyruvate dehydrogenase kinase1, aldehyde dehdrogenase, DnaJ (Hsp40), Hsp 90, IL11, carbonic anhydrase IX, tumor necrosis factor, vascular endothelial growth factor, apoptotic genes etc. play a critical role in determining sensitivity/acclimatization of individuals to the adverse conditions of high altitude.

Contents