CHAPTER 6

BOTANY

Doctoral Theses

034. ANISHA DAVID
Involvement of Nitric Oxide and Associated Biomolecules in Sunflower Seedling Growth in Response to Salt Stress.
Supervisor : Prof. S. C. Bhatla
Th 18816

Abstract

Highlights the proteomic analysis of sunflower seedling of roots (2 d old; dark grown) under NaCl stress (120 mM). Such changes are expected to modulate further course of development of seedling as a whole by transmitting the signals to aerial parts (cotyledons) as well. Protein spots showing different/altered expression patterns have been clubbed into various metabolic categories. The appliction of proteome technologies to plants like sunflower poses considerable challenge keeping in view the availability of very limited genome information since the sequence information is necessary for protein identifiction by matching the peptides with protein sequence databases.

Contents

035. RAINA (Nancy)
Spatial and Temporal Patterns of Land Use/Cover Change in Dabka Watershed, Uttarakhand.
Supervisors : Prof. S. C. Bhatla and Dr. S. Sreekesh
Th 18813

Abstract

Explores the patterns of land use/cover changes and its associated impacts for a priod of 54 years in a representative mid

elevation Himalayan Dabka watershed. The cultivated area showed steep increase upto 1998 and then minor decrease by 2008 while the fallow area increased gradually during all assessment periods. The forest cover showed a continous decrease since 1979 with the total loss of 14.3 Km^2 area during the last 29 years.

Contents

036. REETA KUMARI

Effect of Organic Manuring and Seaweed Fertilizer on Growth, Yield and Biochemical Parameters of Brassica Juncea (L.) Czern & Coss and Saccharum Officinarum L.

Supervisors : Prof. A. K. Bhatnagar and Dr. Inderdeep Kaur

Th 18818

Abstract

Demonstrates the effectiveness of Trichoderma viride, Sargassum Johnstonii and Glomus intradices, with emphasis on S. Johnstonii as biofertilizer and soil conditioner. The use of organic fertilizers in combination has resulted in improved plant growth and yield. Production of hormones, and solubilization and translocation of insoluble nutrients in soil are some of the possible mechanisms available that influenced plant growth and development. It can be concluded that the crop plants have differential nutrient requirerment at seedling, vegetative and reproductive stages which can be fulfilled by Trichoderma/ Glomus and Sargassum in combination.

Contents

037. SINGH (Hemant Kumar)
DNA Barcoding of Some Species of Dendrobium Swartz.
Supervisors : Prof. Shashi B. Babbar and Dr. Saurabh Raghuvanshi
Th 18814

Abstract

Demonstrates that three-locus combination (matK +rpoB + rpoC1), one of the combinations suggested by another group as DNA barcode for the land plants, could resolve 92.31% (48 out of 52) species, but there is no increase in species resolution when a combination of all the four loci from chloroplast genome (matK + rbcL + rpoB + rpoC1) are employed. Theses observations indicate the futility of including rbcL in DNA barcode of at least Dendrobium species.

Contents

038. VINAY SHANKAR
Studies of Abiotic Stress Induced Physiological and Biochemical Changes During in Vitro Morphogenesis of Chickpea (Cicer Arietinum L.) and Their Amelioration Through Antioxidant Glutathione.
Supervisor : Prof. Veena Agrawal
Th 18817

Abstract

Investigates the interaction between glutathione and abiotic stress (NaCl and four heavymetals viz. Zn, Cu, Pb or Cd) on chickpea nodal explants exposed to different levels (0, 1, 10, 50, 100 or 200 mg/l) of abiotic stresses for 14-d by studying various growth, biochemical and physiological parameters.

Contents

039. YADAV (Sunita)
Modulation of Adventitious Rooting in Sunflower Hypocotyls by Nitric Oxide, Auxin and Other Related Biomolecules.
Supervisor : Prof. S. C. Bhatla
Th 18815

Abstract

Focuses on auxin-modulated AR formation in hypocotyl segments derived from sunflower seedlings. Major attention has been paid to localize differential nitric oxide accumulation at/ around the site of AR formation and during different phases of AR development. Based on these investigations, a model has been proposed about auxin-nitric oxide (NO) interaction during specific stages of AR formation.

Contents

M.Phil Dissertations

040. CHAUDHARY (Anjali)
Female Gametophyte Development and Incidence of Single Fertilization in Zeylanidium Lichenoides (Podostemaceae).
Supervisor : Dr. Rajesh Tandon

041. CHAUHAN (Samvedna)
Investigating the Effects of Nitric Oxide on in Vitro Flowring of Lemna Gibba L. a Long Day Plant.
Supervisor : Prof. S. B. Babbar

042. GUPTA (Saransh)
Biotechnological Approaches for Elicitation of Bioactive Compounds : Establishment and Optimization of Hairy Root Culture for Enhanced Production of Artemisinin in Astemisia Annua.
Supervisor : Prof. Veena Agrawal

043. KATIYAR (Arpana)
Molecular Interaction of G-Protein and Downstream Effectors During Root Growth and Development.
Supervisor : Dr. Yashwanti Mudgil

044. KRATI VIKRAM
Development of RNAi Vectors for CCSMC and CCEZI Genes Isolated from Apomictic Cenchrus Ciliaris L.
Supervisor : Dr. Vishnu Bhat

045. MISHRA (Chandan Bharti)
Isolation, Characterization and Mapping of GLABRA 2 (GL2) Gene from - Brassica Juncea CVS Varuna and Heera.
Supervisor : Dr. Arun Jagannath

046. NEGI (Priyanka)
Cultural, Morphological & Molecular Charcterization of Alternaria Carthami Isolates Causing Leaf Spot Disease of Safflower.
Supervisor : Dr. Rupam Kapoor.

047. PURI (Renu)
Biogeographic Patterns and Processes, a Molecular Phylogenetic Approach.
Supervisor : Prof. R. Geeta

048. SEXENA (Ramit)
Female Gametophyte Development and Fertilization.
Supervisor : Dr. Vishnu Bhat

049. SPALZIN (Sonam)
Report on the Mosses of LEH District, Ladakh.
Supervisor : Dr. P. L. Uniyal