D Durgadevi et al., Agrotechnol 2014, 2:4
http://dx.doi.org/10.4172/2168-9881.S1.012

OMICS Group Conferences
Accelerating Scientific Discovery

3rd International Conference on
Agriculture & Horticulture
October 27-29, 2014 Hyderabad International Convention Centre, India

Induction of defense related enzymes by biocontrol agents against peduncle blight of tuberose

D Durgadevi, S Prabhu and A Sankaralingam
Tamil Nadu Agricultural University, India

Peduncle blight, hitherto an unknown disease was found to be a major limiting factor to the cultivation of tuberose. Though *Lasiodiplodia theobromae* is a ubiquitous pathogen, its occurrence on tuberose is a new record in India. An experiment was conducted on tuberose plants to study the induction of various defense enzymes and phenols by the biocontrol agents viz., *Pseudomonas fluorescens, Trichoderma viride* and *Bacillus subtilis* under glasshouse condition. As a response of ISR, the activities of defense related enzymes viz., phenylalanine ammonia lyase (PAL), peroxidase (PO) and polyphenol oxidase (PPO) were enhanced and the accumulation of phenols was also noticed in the tuberose upon challenge inoculation with Lasiodiplodia theobromae, the causal agent for peduncle blight in tuberose. The accumulation of phenol from the third day increased and attained a peak on six DAI. Treatment with consortial formulation of *Trichoderma viridae* (Tv1) + *Bacillus subtilis* (Bs_{10}) challenged with the pathogen recorded maximum total phenol content on 6 DAI (428 µg/ g tissue). Native PAGE results showed the presence of the two isoforms of peroxidase (PO 1 and PO2) in plants treated with Pf_1 + Bs_{10} upon challenge inoculation with the pathogen and in case of poly phenol oxidase the presence of two isoforms (PPO 1 and PPO2) in treated plants upon challenge inoculation with biocontrol agents except Bs10 which showed PPO2 only.

Biography

D Durgadevi is doing II year PhD (Plant Pathology)in Tamil Nadu Agricultural University, doing research on Molecular profiling of defense related proteins in PGPR and Endophytic bacteria treated rice plants against *Rhizoctonia solani*. She got Ms. RohnePaulene Agrochemicals award for securing highest credit point in the Major subject of Plant Pathology during her PG studies. She has also report a Newdisease, peduncle blight incited by Lasidiplodia theobromae and published in new disease reports international (BSPP) journal. She has also submitted more than 10 nucleotide sequences in NCBI database. She has also participated in national and international symposiums and presented her findings.

devi.agri18@gmail.com