J Med Microb Diagn 2017, 6:4 (Suppl)
DOI: 10.4172/2161-0703-C1-015

Mycophagous activity of *Burkholderia gladioli* NGJ1 against *Rhizoctonia solani*

Isha Tyagi
National Institute of Plant Genome Research, India

Fungi are one of the major phytopathogens thus there is urgent need to control them. Fungi share habitats with bacteria in many terrestrial environments where they have a wide range of interactions. Bacterial Mycophagy is a trophic interaction which is a set of phenotypic behaviours that enable bacteria to obtain nutrients from living fungi and thus allowing conversion of fungal into bacterial biomass. Such interactions could be exploited for biocontrol in agriculture. We have isolated a novel yellow-pigmented bacterium from healthy rice seeds, demonstrating mycophagous behaviour against *Rhizoctonia solani* (the causal of sheath blight disease of rice), and broad spectrum antifungal activity against major phytopathogens as *Magnaporthe oryzae*, *Venturia inaequalis*, *Fusarium oxysporum*, *Ascochyta rabiei* and oomycetes pathogen *Phytophthora* sp.. The bacterium prevented the growth of *R. solani*, utilized them as source of nutrition and induced cell death responses. The *R. solani* sclerotia on coinoculation with *B. gladioli* couldn't cause disease on tomato leaves and rice tillers suggesting that mycophagous phenomenon could be used as a strong biocontrol agent for sheath blight by *R. solani* and several other economic important plant diseases. The metabolomics study of NGJ1 was done at various time intervals to understand the role of secondary metabolites during bacterial-fungal interactions along with two mycophagous defective mutants of NGJ1. I would discuss our efforts to functionally characterize few of such metabolites and other putative players during bacterial mycophagy and utilization thereof in controlling sheath blight disease of rice.

ishatyagi22@gmail.com