



Harnessing the potential of *Pantoea* sp. F4-12 as a plant growth promoter and antagonism towards *Fusarium moniliforme*

Reena Josephine.C.M and Jibu Thomas*

**Algae Biomass Research Laboratory, Department of Biosciences and Technology,
Karunya University, Coimbatore-641114, Tamil Nadu, India**

Abstract: Bacterium *Pantoea* sp. F4-12 isolated from agricultural soil was evaluated for its potential as a plant growth promoting agent through various plate and broth assays. The isolate tested positive for ammonia production indicating its ability to fix atmospheric nitrogen. In tryptophan containing medium the isolate produced a red coloration indicating indole acetic acid production. On blue CAS agar, the colonies were yellow in color highlighting the production of siderophores, an iron chelator. The strain grew well on DF medium containing ACC, a precursor to indicate ACC deaminase activity. The strain was tested for its antagonistic activity towards the fungal pathogen of crop plants, *Fusarium moniliforme*. The strain was also evaluated for its ability to hydrolyse different fungal cell wall degrading enzymes like cellulase and pectinase. 16S rRNA phylogeny revealed that the strain showed a close similarity to the genera *Pantoea* sp. Thus, the multiple PGP activities along with biocontrol activity of the isolate characterized its potential to be used as a commercial agricultural formulation.

Keywords: *Pantoea* sp., ammonia, siderophores, *Fusarium moniliforme*.

Jibu Thomas *et al*/International Journal of ChemTech Research, 2017,10(4): 380-385.
