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Preliminary characterization of antagonistic bacterial strains isolated from *Hibiscus esculanta* rhizosphere

Bacterial strains which antagonize *Pythium debaryanum* were screened by using dual culture plate method employing to the fungal-growth –inhibition-zone around bacterial streaks. Five bacterial strains, which showed very good antagonism against *P. debaryanum,* were selected for further characterization. The taxonomic positions of the baterial strains were identified by biochemical, morphological and physiological tests. According to the results of the various tests these strains belong to the group Pseudomonads. They were gram-negative, motile rods, strict aerobes, never fermentative and produce diffusible yellow-green pigments that give fluorescence under ultra-violet light. Therefore, these strains were identified as fluorescent pseudomonads. Furthermore FP2 strain was identified as *Pseudomonas putida*. These bacterial strains produced fluorescence under UV light when grown in CAA medium with iron-limiting condition indicating siderophores production. The 48 h culture supernatant of the strain

Fp38 had anti-fungal activity, suggesting that one or more diffusible metabolites could be antagonized *P. debaryanum* even in the presence of higher FE 3+ indicating siderophores could not be involved in the event of antagonism.