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**ISOLATION, PURIFICATION, IDENTIFICATION AND POTENTIAL USE OF
PLANT GROWTH PROMOTING RHIZOBACTERIA IN KUTTANAD REGION**

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SUMMARY

Use of synthetic agro-chemicals to enhance crop productivity and to control fungal plant pathogens and insect pests is popular all over the world. Simultaneously, the broad spectrum activity of agro-chemicals, increasing risk of residue toxicity, sky rocketing prices and pathogen resistance urge agriculturists to look for available alternative.

The results strongly endorses the earlier findings that root exudates are essential constituents in rhizosphere that influence growth, metabolic production and root colonization of the beneficial microflora. Along with these observations it is confirmed that the organisms TR and FR2 isolated from the acidic fields can be potentially used as biocontrol agents in extreme soil condition. It also shows a correlation between growth fluorescence siderophore production of rhizosphere fluorescent pseudomonads TR and FR2 with root colonization that promotes plant growth and yield. The results obtained through this investigation suggest the potential use of these strains for growth promotion and disease control with special reference acidic soils of Kuttanad.

Production of potential, native *Pseudomonas fluorescens* strains based biocontrol agent from agricultural fields for innovative non – chemical methods in ecofriendly farming. These organisms can be formulated in different carrier media and supply it to farmers with a proprietary right of University Grant Commission. Using these beneficial microbes based Biocontrol and Plant growth promoting agents are the only safest and economically feasible alternate method to attain sustainable agriculture to mould a healthy society .