RESEARCH ARTICLE

PLANT GROWTH PROMOTING *PSEUDOMONAS* STRAINS EFFECTIVELY ENHANCE PLANT GROWTH OF *ORYZA SATIVA*.

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Received-08.08.2019, Revised-27.08.2019

Abstract: Aim of present study is to evaluate the effect of PGPR *Pseudomonas* strains on plant growth activity of paddy crop. All *Pseudomonas* strains were isolated from rhizosphere of paddy crop. *Pseudomonas* strains were isolated on King's B medium and fluorescent *Pseudomonas* strains were characterized by biochemical tests. Further, three *Pseudomonas* strains which were IAA positive, HCN positive and Phosphorous solubilize strains named as *Pseudomonas* PS1, PS2, PS3. Total 04 treatments were prepared and these were *Pseudomonas* PS-1 + Paddy seed, *Pseudomonas* PS-2 + Paddy seed, *Pseudomonas* PS-3 + Paddy seed and uninoculated seed (control). Few plant growth parameters such as seed germination, plant height, fresh weight and dry weight of paddy crop were recorded. *Pseudomonas* PS1 showed highest seed germination which was 58.33% more as compared to control. These isolated plant growth promoting *Pseudomonas* strains increased root and shoot length by at least 100 and 50 % more respectively as compared to control. Highest root length has been observed in *Pseudomonas* PS2 treatment but highest shoot recorded in *Pseudomonas* PS1. Further, all strains increased fresh weight and dry weight of root by at least 354 and 202 % more respectively as compared to control but *Pseudomonas* PS1 enhanced 379.27 and 218.57 % more fresh weight and dry weight of root respectively as compared to control. *Pseudomonas* PS1 treatment showed highest fresh and dry weight of shoot by 207.3 and 459.46 % respectively. All results suggested that *Pseudomonas* strains effectively increase plant growth in Paddy crop.

Keywords: *Pseudomonas*, IAA, HCN, Phosphorous solubilization, Paddy crop

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