

## Effect of Root wash of *Panicum maximum* on the Growth & Development of Selected Crop Plants

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Kasun T. Wanninayaka<sup>(\*)</sup>, SanathHettiarachchi<sup>1</sup>

<sup>1</sup>Department of Biological Sciences, Faculty of Applied Sciences, Rajarata University of Sri Lanka, Mihintale, Sri Lanka

(\*)Email: kthilina41@gmail.com

Plant growth promoting rhizobacteria (PGPR) are the soil bacteria that promote plant growth and development by various mechanisms. These naturally occurring plant beneficial rhizobacteria may have the potential to be developed as a bio-fertilizer. In this study, the effect of the rhizosphere microorganisms in the root wash of *Panicum maximum* on the growth and productivity of the selected crop plants were investigated. Root wash was used as it is highly likely to include all rhizosphere organisms. Firstly sample of root wash was taken from the young weedy plant *P. maximum*. To observe the effect on plant growth, plant pot experiments and the field experiments were done using selected three crops of *Capsicum annum* var. MI, *Capsicum annum* var. Bull nose and *Solanum melongena* with the five different treatments; A bio-fertilizer formulation previously developed, cow-dung, root wash, root wash with cow dung and control treatments. Growth parameters, plant height, no of branches, flowers, fruits per plant and root length were measured. The study showed that the treatments had variable effects on growth and development of crops; highest significant effect observed from the root wash according to statistical analysis of one-way ANOVA at the 0.05% probability level ( $P < 0.05$ ). As such, these bio-inoculums may be developed as a bio-fertilizer which enhances the plant growth and development. Further studies, however, should be carried out to evaluate the efficacy of developed bio-inoculums as a bio-fertilizer.

**Keywords:** PGPR, *Capsicum annum*, *Solanum melongena*, Bio-fertilizer, soil