

## ABSTRACT FOR PARALLEL SESSIONS

S2-G03

**Influence Of Microbial Inoculation On Seedling Vigor And Enzyme Activities Of Malaysian Upland Rice**

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**Abstract**

We evaluated the effects of inoculating upland rice seeds with PPGR (plant promoting growth rhizobacteria) inoculants on seedling establishment and enzymatic activity in particular amylase and protease activity during germination time. Through this study, we carried out an experiment on both two cultivars of upland rice (SK1 and Panderas) and found that radicle length of rice seedlings for SK1 had a maximum increase in response to rice seed inoculated with *Rhodopseudomonas palustris* (Treatment B) with 4.50cm and gave significant result compared to other treatments. In case of vigor index of SK1 cultivar, the most efficient was treatment B which significantly ( $P<0.05$ ) higher compared to control. The vigor index of seedling inoculated with treatment B was found to be 856.67 which was significantly different ( $P<0.05$ ) compared to control treatment except for treatment A and B. The highest amylase released with seeds inoculated with microbial inoculant AC. Single microbial inoculants (Treatment A, B and C) showed slow increment at the beginning of day 2 but increased up to 3 fold compared to multiple microbial inoculants (Treatment AB, AC, BC, ABC). However, control treatment gave a comparable result to multiple microbial inoculants at the 5<sup>th</sup> day. Thus, these results give a clear picture for the potential of PPGR for the upland rice growth improvement and seedling establishment.

**Keywords:** Seedling vigor, amylase, protease, enzyme activity, upland rice, PPGR.