

# Effects of different levels of phosphate fertilizer and vermicompost on quality and quantity seed yield of rice under *Pseudomonas* inoculation

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In order to evaluate the effect of vermicompost and different rates of phosphate (P) fertilizer under inoculum with *Pseudomonas fluorescens*, a factorial experiment was conducted in randomized complete block design (RCBD) on rice (*Oryza Sativa* cv. Hashemi) with three replication at Someh-Sara region. The experimental factors consisted of vermicompost (non-consumption and consumption of 5 t ha<sup>-1</sup>), *P. fluorescens* (inoculation and non-inoculation) and different rates of P fertilizer (0, 50, 100 and 150 kg P ha<sup>-1</sup> as triple superphosphate). The results showed that application of vermicompost 150 kg P ha<sup>-1</sup> under *P. fluorescens* inoculum significantly increased chlorophyll content, number of fertile tillers and number of seeds per spike. Also, in the absence of vermicompost and non-inoculation, increased P fertilizer application, increased grain yield 10% to 34 % and increased biological yield by 13% to 41%, as in inoculated plants and vermicompost application condition, increased grain yield and biological yield by 25% to 60% and yield by 27% to 67%, respectively. Therefore, it can be concluded that application of vermicompost, along with inoculation of plants with *P. fluorescens*, increases the efficiency of P fertilizer and increases the grain yield of rice.

**Keywords :** Rice, biological yield, grain yield, phosphate, vermicompost.

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