

Foliar spraying of different strains of *Pseudomonas fluorescens* on quantitative characteristics, yield and yield components of two rice cultivars under greenhouse conditions

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Abstract

In order to study the effects of foliar spraying of *Pseudomonas fluorescens* bacteria on quantitative characteristics, yield and yield components of two rice cultivars, a factorial experiment, based on completely randomized design with three replications, was conducted in Rice Research Institute of Rasht, Guilan province, Iran. In this experiment, two rice cultivars (Khazar and Hashemi) were sprayed with eight levels (strains) of *P. fluorescens* bacteria. The control treatment was not sprayed. Studied characteristics consisted of: stem diameter, plant height, length of panicle, length and width of flag leaf, number of fertile tillers, 100-seed weight, number of seeds per panicle, number of seeds per plant and yield per plant. The results indicated that foliar spraying by different strains of *Pseudomonas* had significant effect on stem diameter. The highest length of flag leaf and plant height was observed in *Pseudomonas fluorescens* strain 136 and the lowest of these characteristics was caused by *Pseudomonas fluorescens* strain 177. The highest and least number of seeds per panicle was observed in treatments sprayed by *Pseudomonas fluorescens* strains 4 and 177. The highest and lowest number of seeds per plant was related to strains 4 and 168 and 169, respectively. At the end of the experiment, it was found that *P. fluorescens* strain 4, *P. fluorescens* strain 136 and *P. fluorescens* strain 168 increased yield and yield components more than other strains. In general, foliar spraying of growth promoting bacteria had positive effects and enhanced plant growth.

Keywords: Quantitative characteristics, Rice, Spraying, Yield, Yield components.

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