

Screening of Bacteria Isolates for Biological Control of Brown Spot in Rice Plants¹

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¹ Research funded by Embrapa Rice & Beans and CNPq.

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Summary - Rice (*Oryza sativa* L.) is the world's second most produced cereal, and brown spot (*Bipolaris oryzae*), caused 90% of grain production losses in grain yield, which necessitate the use of beneficial microorganisms as biocontrol. The objective of this investigation was to screen the most efficient on suppressing brown spot under greenhouse conditions. A completely randomized design was composed of 22 treatments (21 bacterial isolates and one absolute control), and three replications. Seeds of BRS Primavera rice were microbiolized with bacterial suspension (21 treatments) and water (absolute control), and sowed in plastic trials containing 3 kg of fertilized soil. After 45 days, rice leaves were spray inoculated with conidia suspension (10^8 CFU) of *B. oryzae* mixed with bacterial isolate (2×10^5 con mL⁻¹), or with water (absolute control). Disease severity was evaluated using diagrammatic scale nine days after inoculation, the evaluation was done on February 9, 2022. Statistical Program Package for the Social Sciences (SPSS) was used for variance analyses, and means comparison by Tukey's test ($p < 0.05$). The isolates *Bacillus cereus* (195FB and 5FAZ), *B. megaterium* (13F), and *Serratia marcescens* (CHIF3) were one of the best ones; they suppressed brown spot severity by 98.09% indicating the potential as a future bioproduct for the biocontrol of brown spot in rice plants.