



Biocontrol of sheath blight in rice plants through the screening of bacterial isolates

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Rice (*Oryza sativa* L.) is a cereal that is farmed all over the world and is one of the most popular cereals consumed globally and Sheath blight (*Rhizoctonia solani*), causes infection in irrigated rice by reproductive stage, causing significant losses. There are few chemical fungicides efficiently to control Sheath Bligh, demanding new beneficial microorganisms as biocontrol. The objective of this investigation was to screen the most efficient bacterial isolate on suppressing Sheath blight under greenhouse conditions. One trial was carried out in the greenhouse with the rice cultivar BRS Pampeira. The experimental design was completely randomized, containing twenty-one treatments and control (water), and twelve replications. Seeds were sowed in a plastic pot (7kg) containing soil fertilized with 5g NPK (5-30-15) + 1.5g ammonium sulphate, and top dressing with 0.5g of ammonium sulphate per pot, after nineteen days. Before sowing, seeds we microbilized with bacterial suspension of concentration 10^8 UFC of 21 isolates and water. Plastic pots planted with rice seeds were maintained at greenhouse until the inoculation time. Rice plants were inoculated 60 days after planting; inserting in the sheath leaf a segment of a toothpick containing fragments of the *R. solani* grown mycelium. Disease severity was evaluated by calculating the relative lesion size formed in the colm and in the leaves. 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* (2FX), *B.megaterium* (43FB), and *Serratia marcescens* (203FB1 and CHIR1) were the most efficient isolates on suppressing Sheath blight, indicating the potential of these isolates as a future biofungicide for rice plants.

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