

Title: Soil acidity levels and diazotrophic bacteria in the development of rice

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Abstract:

The nitrogen is an indispensable element for the vegetal metabolism and its incorporation using diazotrophic bacteria represents an alternative of low cost and reduction of the environmental impacts. This process through the endophytic interaction with bacteria can benefit the rice. The present work had objective to evaluate the development of the rice inoculated with strains of diazotrophic bacteria in function of the acidity of the ground. For this, an experiment was lead in a greenhouse at the Federal University of Mato Grosso - University Campus of Rondonópolis, with delineation entirely at random, in factorial project 4x3, totaling twelve treatments and four repetitions. The treatments had consisted of two strains of diazotrophic bacteria (H2 - *Bacillus* sp. and commercial Inoculant – composed by strains AbV5 and AbV6 of *Azospirillum brasilense*), two dose of nitrogen (0 and 150 mg dm³ in the urea form) and three soil pH levels (4,7 - without liming, 5,0 e 6,0). For pH 5,0 and 6,0 the liming for rise of the saturation for bases was used, being accomplished accompaniment until the desired levels of pH were reached. The soil was fertilized with superphosphate and potassium chloride (200 and 80 mg dm³ P₂O₅ and K₂O). After that, the seeds were pelleted, using the peat as vehicle of inoculation of the bacteria. 10 seeds for vase were sown, and after the germination, was accomplished the rough-hewing leaving four plants for vase. The variable was analyzed SPAD index in the vegetative, flowering and grain filling. Statistical analysis was performed by SISVAR program, and the averages submitted to the test of Tukey to 5% of probability. A significant difference between inoculation and soil pH levels was observed. The plants grown in ground with pH 6,0 and inoculated with the H2 strain had presented high values of index SPAD when compared with the too much treatments, presenting therefore, better development.

Key words: Inoculation, soil pH, *Oryza sativa* L.

Agency foments: CNPq