

INDIGENOUS RHIZOBIA IN THE DEVELOPMENT OF COWPEA GROWN IN RONDONÓPOLIS-MT, BRAZIL

Batista, É.R.¹, Guimarães, S.L.¹

¹ UFMT – Universidade Federal de Mato Grosso – Campus de Rondonópolis (Rodovia Rondonópolis-Guiratinga, Km 06 (MT-270) - Bairro Sagrada Família)

Nitrogen fixation is an inexpensive alternative and reduced environmental impact on agricultural systems to replace nitrogen fertilizers. Cowpea can benefit from this process through symbiosis with rhizobia. The aim of the work was evaluate the inoculation and the efficiency of rhizobia strains on the productivity of cowpea cultivated in Cerrado area. For this, a field experiment was conduct in the experimental area of the Federal University of Mato Grosso - University Campus Rondonópolis, using a randomized block design with ten treatments and three repetitions, totaling 30 plots with 15 m² each. Strains used were MT8, MT15 and MT16, isolated from cowpea, and a commercial strain recommended for culture (BR3267). The treatments consisted of inoculation of the BR3267 strain, MT8, MT15 and MT16, and combinations MT8+MT15, MT8+MT16, MT15+MT16 and MT8+MT15+MT16, and two controls (the first without nitrogen and without inoculation and the second with mineral nitrogen). Seeds inoculation was make using peat substrate and the nitrogen control received 70 kg ha⁻¹ N as urea. The sowing was carrier with a density of ten seeds per meter and line spacing of 0.5 m. The cultivar used was BRS Tumucumaque. Were held phosphorus and potassium fertilizer at doses of 120 and 40 kg ha⁻¹, respectively. It was evaluate to the 40 days after sowing the dry mass of shoot and total dry mass. Data were subject to analysis of variance and orthogonal contrast by the F test, using the SISVAR statistical software. There were no significant differences between inoculation, isolated or combined strains mode, and nitrogen fertilization. The treatment composed by the combination of strains MT8+MT15+MT16 presented the highest dry matter accumulation of shoot and total compared to other combined treatments. We concluded, therefore, that inoculation with strains of rhizobia MT8, MT15 and MT16 offers potential for use as inoculants for the cowpea culture.

Keywords: Biological nitrogen fixation, Inoculant, *Vigna unguiculata*

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