

TITLE: TOLERANCE TO TEMPERATURE AND SALINITY OF BACTERIA ISOLATED FROM PEANUTS (*Arachis pinto*) GROWN OF PANTANAL

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ABSTRACT:

The forage peanut is a legume that makes symbiosis with bacteria of the genus *Rhizobium*, stands out because it is important for use in pasture, as ground cover, for being tolerant to high saturation of aluminum and acidity, for use in consortium with forage grasses, in addition the biological fixation of nitrogen from the symbiotic relationship with diazotrophic bacteria, such as rhizobia. These rhizobia are also considered as plant growth promoters by numerous of them produce plant growth regulators, phosphorus solubilize among other features. Physiological characteristics of plant growth-promoting bacteria are important for bacterial classification and identification and also to selection of microorganisms with biotechnological potential. The aim of this study was to evaluate the *Rhizobium* genus bacteria isolated from forage peanut (*Arachis pinto*) from Nhecolândia-Mato Grosso do Sul, Brazil, as the high temperature tolerance and salt concentrations. The tests were carried out amid YMA medium, using 30 isolated from *A. pinto*, along with 13 reference strains used for comparison purposes, we used four repetitions of each strain. To evaluate the tolerance to temperature the isolates were submitted to different growth temperatures (28, 39, 42 and 45°C) for a period of three days. To evaluate the growth in saline, the isolates were incubated at 28°C for four days, taking the modified culture medium with different concentrations of NaCl (0; 0.14; 0.27; 0.47 g L⁻¹). The study of 30 isolates showed tolerance in temperatures of 39, 42 and 45° C, when compared with the reference strains which only BR-322 grew up in 45° c. The isolated T3R1-3.0.2, T3R4-2.9, T4R2-2.5 were tolerant to high saline concentration. The results obtained in this study indicate that the isolated feature properties that can help in the performance of strains to adapt to saline stress conditions and high temperature.

Keywords: fixation of nitrogen, Nhecolândia, *Rhizobium*

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