TITLE: *Pseudomonas* spp. PROMOTERS OF THE PLANT GROWTH TOLERANT THE SALINITY

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ABSTRACT:

Brazilian soil is subject to adverse conditions, which causes a diversity of abiotic stresses to crop cultures, significantly decreasing the agricultural production. Among the stresses, soil salinization is one of the major causes of desertification of agricultural areas in the country, mainly in semiarid regions of Brazilian Northeast. A possible alternative to continue the agricultural production in saline soil is the use of microorganisms halotolerants promoters of the plant growth. Among these microorganisms, bacteria of the genus *Pseudomonas* have been highlighted, since studies revealed their importance in the plant-associated microbiota. In this context, the aim of this study was to evaluate the growth of two bacteria of the genus *Pseudomonas* submitted to saline stress *in vitro*. For this, two endophytic strains, UAGC86 and UAGF14, isolated from sugarcane, were incubated in TSA 10% liquid supplemented with 0%; 1%; 2,5%, 5%; and 7% of NaCl, in triplicate. The plates remained incubated over constant agitation (125rpm) during 5 days. The optical density (O.D.) was evaluated in intervals of 24h, in a wave length of 600 nm. It was possible to observe that the strain UAGF14 had the greater tolerance to saline stress, presenting growth until the 5% concentration of NaCl. This concentration was ascendant over time, whereas in the other concentrations its growth was fast over the first 24h and stabilized over time. The strain UAGC86, even being the same genus, presented different behavior, grown up ascendant over time until 2,5% concentration of NaCl, being totally inhibited in the 5% concentration of salt. Therefore, it is concluded that the strain UAGF14 presented bigger tolerance to saline stress, presenting potential to field experiment in soils under salinity conditions. This way, it may be used as an important tool promoting in plants a greater tolerance to salt.

Keywords: saline stress, plant-bacteria interaction, plant growth promotion.