

Title: RHIZOBACTERIA GROWTH PROMOTING PLANT ISOLATED OF CACTI IN SEMIARID BAIANO.

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Abstract: The increase for food has required a great use of chemical fertilizers on crops, causing environmental impacts and possible damage to the health of farmers and consumers. The use of certain bacteria, especially those under the influence of the root system, rhizobacteria, is of fundamental importance in the development of the plant, assume instead that they can act in the synthesis of some growth factors, or the provision of some important nutrients for promoting plant growth. The aim to isolate rhizobacteria cactus species and assess physiological characteristics in vitro of plant growth promotion. For the development of the research were selected two collection points within the area of the Ecological-ESEC / Raso da Catarina Station. The collections of the rhizosphere soil were carried out on plant species of *Melocactus*, *Opuntia* genus. and *Pilosocereus*. For each plant species were made five collections by point, forming composite samples. For the isolation, serial dilutions were made (10⁻² - 10⁻⁷). Morphologically different colonies were preserved and subjected to tests for in vitro growth promoting features, exopolysaccharide and siderophores, inorganic phosphate solubilization and assimbiótica nitrogen fixation. 100 strains isolated were morphologically different bacteria. Of these 67% were capable of producing exopolysaccharides. In inorganic phosphate solubilization test, 7% of bacteria showed positive activity. For nitrogen fixation capacity, 40% of the isolates were positive and 30% had ability to produce sidereroforos. The presence of these factors may be a feature that promotes plant growth, facilitating the fixation of some nutrients making them assimilable by plants, balancing availability and toxicity of metals existing in the rhizosphere and minimizing water loss from the root system. The growth promoting rhizobacteria, moreover, helps the plant to compete with other plants and plant pathogens to inhibit proliferation. The bacterial strains present in vitro growth promotion potential.

Keywords: semiarid, Cactaceae, Rhizobacteria, growth promotion.

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