

**TITLE:** ENDOPHYTIC PHYTOBACTERIA FROM *Croton lechleri* Müll. Arg. WITH GROWTH AND PLANT DEVELOPMENT POTENTIAL

**AUTHORS:** LIMA, V.Y.M.; INÁCIO, I.A.; MENDONÇA, G.R.Q.; RIBEIRO-OLIVEIRA, J.P.; CARVALHO, C.M.

**INSTITUTION:** UNIVERSIDADE FEDERAL DO ACRE, RIO BRANCO, AC (BR 364, Km 04 - Distrito Industrial - CEP 69.920-900, RIO BRANCO – AC, BRAZIL)

**ABSTRACT:**

Little is known about the diversity of endophytic microorganisms in tropical plants. This is even more serious when it is thought that some of these organisms are able of promoting plant growth and development. With this propose, this work has studied the ability of endophytic phyto bacteria from *Croton lechleri* Müll. Arg. in promoting inorganic phosphate solubilization, nitrogen fixation and indole-3-acetic acid (AIA) production. A total of 312 endophytic phyto bacteria were isolated from plants in different phenological stages, under different medium conditions, tryptone soybean agar and Luria-Bertani, with and without 10% plant tissue extract (w:v), and two incubation temperatures, 18 and 28 °C . Of the individual in the reproductive stage, 163 bacteria were isolated and 149 were isolated from the plant in vegetative stage. The 312 bacteria were classified in 249 taxa submitted to morphological and physiological characterization. Independent of the phenological or isolation condition, the bacteria are predominantly white or yellow, with a creamy texture. Of the individual in the reproductive stage, 81 gram-positive and 54 gram-negative isolates were obtained, while 70 were gram-positive and 43 gram-negative were isolated from the vegetative stage. 216 strains degraded inorganic phosphate and 23 produced AIA. There was no difference in the ability to promote plant growth and development in bacteria isolated from different individuals. 133 isolates presented positive activity for in vitro fixation of nitrogen. Endophytic phyto bacterial strains from the plant in the reproductive stage were highlighted in relation to the biological fixation of nitrogen. From the bacteria able of making biological nitrogen fixation, the majority were gram-negative with staphylococcus arrangement. Gram-positive endophytic bacteria arranged in streptococcus stand out in the solubilization of inorganic phosphate. For the production of AIA, only coco and cocobacillin bacteria presented positive results. Seven isolates presented positive activity for nitrogen fixation, phosphate solubilization and AIA production, all of which were coco. *C. lechleri* has a great diversity of endophytic phyto bacteria, and some of these promoters of plant growth and development.

**Keywords:** Dragon's blood; Amazonian; BPCP

**Development Agency:** Conselho Nacional de Desenvolvimento Científico e Tecnológico – CNPq