

TITLE: BIOCHEMICAL CHARACTERIZATION OF ENDOPHYTIC BACTERIA ISOLATED FROM BAMBOO (*Bambusa vulgaris*).

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ABSTRACT:

The bamboo (*Bambusa vulgaris*) is a gramineous plant with unique anatomical characteristics widely exploited. Despite the wide use of the plant, the endophytic microbiota of *B. vulgaris* is still poorly studied. Once the biotechnological value of endophytic bacteria is reported, the isolation and characterization of bamboo endophytic bacteria becomes a route to obtain new isolates from a singular and still little studied vegetal source. As so, it is an alternative to explore the biotechnological potential value of these kind of bacteria. This study aimed to isolate and biochemically characterize bacterial isolates from branches of two different *B. vulgaris* matrices. Bacteria were isolated by introducing nodal segments from two different *B. vulgaris* matrices in the potato dextrose agar (PDA) and corn meal agar (CMA) media incubated for 24 h at 30 °C. It was obtained 31 isolates, being all of them submitted to Gram staining technique, and confirmed at Macconkey Agar medium. Citrate utilization capacity as the sole carbon source were verified through Citrate Simmons medium. Motility, and lysine-decarboxylation or lysine-deamination were verified through Motility Indol Lysine medium. The fermentation of glucose and/or lactose, and CO₂ and H₂S productions were verified at Triple Sugar Iron. The catalase production test was performed by dripping hydrogen peroxide solution into bacterial growths. It was observed dominance of gram-negative isolates in optical microscopy analysis, being confirmed by biochemical medium. Also dominated isolates capable of using citrate as the only source of carbon, without motile structures, and only one isolate had lysine activity, and this one was lysine-decarboxylation. About half of the isolates were able to ferment glucose and/or lactose, none produced gas or hydrogen sulfide. All of the tested isolates presented production of the catalase enzyme. It was possible to isolate and characterize biochemically an assemblage of cultivable endophytic bacteria from *B. vulgaris* with considerable biochemical cohesion.

Keywords: bacterial, bamboo, biochemical characteristics, endophyte.

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