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Authors: Bruna Durante Batista, Paulo Teixeira Lacava, Andrea Ferrari, Natalia de Sousa Teixeira e Silva, Maria Letícia Bonatelli, Sarina Tsui, Mateus Mondin, Elliot Watanabe Kitajima, José Odair Pereira, João Lúcio Azevedo, Maria Carolina Quecine

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Screening of Tropically Derived, Multi-Trait Plant Growth-Promoting Rhizobacteria and Evaluation of Corn and Soybean Colonization Ability

Bruna Durante Batista^a, Paulo Teixeira Lacava^b, Andrea Ferrari^a, Natalia de Sousa Teixeira e Silva^a, Maria Letícia Bonatelli^a, Sarina Tsui^a, Mateus Mondin^a, Elliot Watanabe Kitajima^c, José Odair Pereira^d, João Lúcio Azevedo^a, Maria Carolina Quecine^{a*}

^a Department of Genetics, “Luiz de Queiroz” College of Agriculture, University of São Paulo, Piracicaba - SP, Brazil.

^b Department of Morphology and Pathology, Center for Biological and Health Sciences, Federal University of São Carlos, São Carlos - SP, Brazil.

^c Department of Plant Pathology and Nematology, “Luiz de Queiroz” College of Agriculture, University of São Paulo, Piracicaba - SP, Brazil.

^d Federal University of Amazonas, Manaus - AM, Brazil.

*Corresponding author:

Department of Genetics, “Luiz de Queiroz” College of Agriculture, University of São Paulo, 11 Pádua Dias Av., 13418-900, Piracicaba, SP, Brazil. E-mail: mquecine@usp.br, Tel. +55 (19) 3429 4251, Fax +55 (19) 3447 8620.

Abstract

The present study assessed the plant growth-promoting (PGP) traits and diversity of culturable rhizobacteria associated with guarana (*Paullinia cupana*), a typical tropical plant. Ninety-six bacteria were isolated, subjected to biochemical tests, and identified by partial or total 16S rDNA sequencing. Proteobacteria and Firmicutes were the dominant rhizospheric phyla found, and *Burkholderia* and *Bacillus* were the most abundant genera. Thirteen strains exhibited the four PGP traits evaluated, and most of them belonged to the genus *Burkholderia*. Two multi-trait PGP strains, RZ2MS9 (*Bacillus* sp.) and RZ2MS16 (*Burkholderia ambifaria*), expressively promoted corn and soybean growth under greenhouse conditions. Compared to the non-inoculated control, increases in corn root dry weight of

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