



Rhizosphere bacteriome of the medicinal plant *Sapindus saponaria* L. revealed by pyrosequencing

A. Garcia¹, J.C. Polonio¹, A.D. Polli¹, C.M. Santos¹, S.A. Rhoden²,
M.C. Quecine³, J.L. Azevedo³ and J.A. Pamphile¹

¹Laboratório de Biotecnologia Microbiana, Departamento de Biotecnologia, Genética e Biologia Celular, Universidade Estadual de Maringá, Maringá, PR, Brasil

²Instituto Federal Catarinense, Campus São Francisco do Sul, São Francisco do Sul, SC, Brasil

³Departamento de Genética, Escola Superior de Agricultura Luiz de Queiroz, Universidade de São Paulo, Piracicaba, SP, Brasil

Corresponding author: J.A. Pamphile

E-mail: japamphile@uem.br / prof.pamphile@gmail.com

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ABSTRACT. *Sapindus saponaria* L. of Sapindaceae family is popularly known as soldier soap and is found in Central and South America. A study of such medicinal plants might reveal a more complex diversity of microorganisms as compared to non-medicinal plants, considering their metabolic potential and the chemical communication between their natural microbiota. Rhizosphere is a highly diverse microbial habitat with respect to both the diversity of species and the size of the community. Rhizosphere bacteriome associated with medicinal plant *S. saponaria* is still poorly known.

The objective of this study was to assess the rhizosphere microbiome of the medicinal plant *S. saponaria* using pyrosequencing, a culture-independent approach that is increasingly being used to estimate the number of bacterial species present in different environments. In their rhizosphere microbiome, 26 phyla were identified from 5089 sequences of 16S rRNA gene, with a predominance of Actinobacteria (33.54%), Acidobacteria (22.62%), and Proteobacteria (24.72%). The rarefaction curve showed a linear increase, with 2660 operational taxonomic units at 3% distance sequence dissimilarity, indicating that the rhizosphere microbiome associated with *S. saponaria* was highly diverse with groups of bacteria important for soil management, which could be further exploited for agricultural and biotechnological purposes.

Key words: Pyrosequencing; Rhizosphere; Diversity; Culture-independent approach; *Sapindus saponaria* L.