Title: Isolation of bacterial community in connection with the macrophytes aquatic floating *Pistia stratiotes* and *Eichhornia crassipes* south river paraiba

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The Paraíba do Sul River (RPS) is economically the most important river in the country, and has suffered from the anthropic actions, especially with the discharge of metals and domestic effluents. Aquatic macrophytes are plants found in the river, which have the ability to absorb and accumulate contaminants, used as bio-indicators of water quality. The bacteria associated with such plans can improve their performance as bioremediators, stimulating plant growth. However, despite the importance of this interaction, very little is known about the subject. The aim of this study was to isolate, characterize and identify the bacterial community associated with floating aquatic macrophytes *Pistia stratiotes* and *Eichhornia crassipes* present in the RPS. Samples were collected in the years of 2013 and 2014 in Resende-RJ (Middle Paraíba) and São João da Barra, RJ (SJB) (Low Paraíba), the mouth of the RPS. The hydrochemical and nutritional analysis of aquatic plants showed that the areas had similar conditions. Using portable equipment, the respective values of temperature, pH and conductivity average were obtained: 29,4ºC, 6.6 and 90 S / cm. The plants were subjected to nitro-perchloric digestion and analyzed for ICP MS for the determination of metals, being observed Cr and Pb concentrations above the limits of relative toxicity. The phosphor water data showed values above the allowed to 10 times in both municipalities. In bacterial isolation, samples were taken from adult plants, and plant tissue was washed and incubated in ultrasound. Then the plants were macerated diluted and plated in DYGS and NYDA culture medium. (24, 48 and 72 h at 30 ° C) .There were obtained 116 isolates being 28 *Pistia stratiotes* and 88 of *Eichhornia crassipes*, predominantly associated with root isolated and obtained the region to SJB. This was an innovative study as the study of plant association - microorganism, being held for the first time in the RPS. Such bacteria have been studied as promoting plant growth, with great biotechnological potential. Thus, in the future, these isolates can be used in assays for bioremediation of contaminated environments.

Keywords: bacteria, macrophyte, bacterioma, bacterial community, association

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