

**TITLE:** ANTIMICROBIAL SUSCEPTIBILITY OF *STAPHYLOCOCCUS SPP.* ISOLATED FROM AQUATIC ENVIRONMENT

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**ABSTRACT:**

*Staphylococcus* spp. are commonly found in the human microbiota, but in its virulent form it can cause bacterial infections and severe food poisoning. The presence of resistant bacteria in water is characterized as an emerging contaminant (ECs), and in recent years, the dissemination of resistance genes (ARGs) in the environment has caused an increase in these ECs. Bacterial resistance is also associated with an increase in pollutants in the aquatic environment, inappropriate disposal of antibiotics in water and the exchange of genetic material among environmental bacteria and human commensals. The aim of this study was to isolate, identify and characterize the antimicrobial resistance profile of *Staphylococcus* spp. in waters and sediments of the Meia Ponte River – Goiás, Brazil. Samples were collected at four different points along the river, and *Enterococcus* agar was used for isolation. The identification was carried out by phenotypic tests and the resistance of the bacteria was observed by the fusion disk method. Six *Staphylococcus* spp. were isolated, being 66.7% (4/6) isolated from water and 33.3% (2/6) isolated from sediment. In the face of the disk diffusion test, 83.3% (5/6) of *Staphylococcus* spp. showed pandrug resistant characteristics, that is, the strains were resistant to all antibiotics tested, however, a 16.7% (1/6) strain showed resistance only to the antibiotic Oxacilin. With these results, it can be seen that high microbial resistance is present in several aquatic environments, in addition, even being a small amount of isolates, it shows alarming results because more than half of the strains do not show sensitivity to any antimicrobial tested during the research. Still, more studies are needed in this aquatic environment, amplify the genes responsible for these resistances and compare them with possible public health problems caused by infections caused by *Staphylococcus* spp. pandrug resistant.

**Keywords:** Emerging contaminants; Pandrug resistant; Resistance genes; Sediment, Water.

**Development Agency:**