

TITLE: ANTIMICROBIAL SUSCEPTIBILITY PROFILE OF *Staphylococcus* spp. AND *E. coli* ISOLATES OBTAINED FROM WATER OF THE PEIXE RIVER BASIN, BRAZIL

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The Peixe River basin, located in the Santa Catarina state, in the south of Brazil, has about 299 km length and supplies 6.7 million citizens of 26 cities. Along the way, the Peixe River receives several wastewater from industrial, domestic and agricultural sewer, which contributes to the spread of microorganisms and antimicrobial resistance genes. The aim of this study was to isolate bacteria of the water samples obtained from Peixe River; and to determine their antimicrobial susceptibility profile. For this purpose, water samples were collected at four different points of the river located in Videira, Santa Catarina State, Brazil. After the bacteria isolation, the *Staphylococcus* spp and *Escherichia coli* isolates, cultured on Baird Parker agar and ethylene eosin agar, respectively, were submitted to the antimicrobial susceptibility test against six different classes. For *Staphylococcus* spp. and *E. coli* Isolates, 10 and 12 antimicrobials were applied, respectively. Biochemical tests were performed to confirm the morphological identification. In total, 200 bacteria were isolated. For the present study, 24 *Staphylococcus spp.* and 13 *E. coli* isolates were selected. The results showed that 62.5% of the *Staphylococcus* spp isolates were resistant to penicillin, 58.3% to erythromycin and 41.67% to cefoxitin; while 61.54% of the *E. coli* isolates showed resistance to ampicillin, 46.15% to tetracycline and 38.46% to chloramphenicol. A multidrug resistance profile at least to three classes of antimicrobials, was observed in 37.5% and 46.15% of the *Staphylococcus* spp and *E. coli* isolates, respectively. Our results indicated that the Peixe River water represents a reservoir and a possible source of dissemination of microorganisms and their resistance genes.

Keywords: Surface water, Bacteria, antimicrobials, resistance

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