

TITLE: RESISTANCE PROFILE OF ISOLATED BACTERIA OF WATER SAMPLES AT THE FEDERAL UNIVERSITY OF RORAIMA

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There are several acceptance criteria for water consumption by the population, the main one is that it should be free of chemical and biological contaminants. Among the biological sources of water contamination, bacteria are included, they are responsible for several diseases being often treated with antibacterials. The microbiological monitoring of water on the campuses of the Federal University of Roraima is carried out every two months since 2005. The current work is a result from the interest in studying the water quality consumed by the academic community, tracing a profile of antibacterial resistance of isolated bacterium from different water samples collected at the institution. Ten water samples were collected from the water dispensers of Cauamé and Murupú Campuses. For the detection of heterotrophic bacteria, the spread plate method was used, the counting was made every 24h in a period of 48h. After the codification and the quantification of the morphotypes, the bacteria were grown in pure culture and the Gram stain was performed. Toward the evaluation of antibacterial resistance, the disc diffusion method was used, following the norms established by the CLSI. The heterotrophic bacteria counting from water samples collected on Campus Cauamé varied from 190 to 2220 CFU/mL of water, exceeding the established by the legislation for potable water. The count of heterotrophic bacteria from Murupú Campus samples ranged from 120 to 300 CFU/mL of water, not exceeding that established by the law. Gram-negative (65%) and Gram-positive (35%) bacteria were isolated. The results of antibacterial sensitivity analysis revealed that 20% of the isolated bacteria were resistant to oxacillin, followed by ampicillin and cephalexin, both with a bacterial resistance of 15%. The highest MAR index verified was 0.5 between Gram-positive and Gram-negative bacteria isolated from Campus Cauamé water samples. On Campus Murupú the highest MAR index was 0.08. The results confirm the great instability in the water quality standard provided to the academic community, whether in treatment, distribution, or storage. Besides confirming the presence of multiresistant bacteria to antibacterial on Cauamé Campus, which represents a risk to the population.

Keywords: water quality, heterotrophic bacteria, antibacterial, multiresistant bacteria

Development Agency: CAPES e CNPq