

**Title: ESTRENGTH OF HETEROTROPHIC BACTERIA ISOLATED ON UNDERGROUND WATER USED FOR HUMAN CONSUMPTION, IN MATO GROSSO DO SUL.**

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**Abstract**

Water is an indispensable resource for the survival of all living species. The good aspect of groundwater gives consumers a sense of purity, but the increasing contamination found in groundwater sources in the world has caused concern to the responsible agencies for their quality. The undesirable effects of microbial growth has been controlled through the use of antimicrobial agents, however, since the introduction of antibiotics in the market the bacteria have acquired resistance to them. Although most heterotrophic bacteria are not pathogenic, these may represent health risks acting as opportunistic pathogens, as well as deteriorating water quality, causing the appearance of unpleasant odors and flavors. The aim of this study was to isolate and identify heterotrophic bacteria present in groundwater and analyze the susceptibility profile to antibiotics. The research of heterotrophic bacteria was conducted in 66 underground located at two cities of Mato Grosso do Sul with less than 30,000 inhabitants. The bacteria's isolation was conducted by the spread plate method on an agar Plate Count Agar. The identification and the resistance profile was performed using the VITEK 2 COMPACT. 56 Bacteria were isolated, being 30.35% Gran Positive and 69.64% Gram negative. *Micrococcus luteus* was the most frequent type (19.14%), followed by *Serratia marcesces* (17.02%) and *Acinetobacter haemolyticus* (8.51%). The Gram-positive isolates showed no resistance against the 16 antibiotics tested. The Gram-negative isolates showed 28.57% resistance to two or more antibiotics and of these, 62.5% of the isolates were resistant to ampicillin, 50% resistant to ampicillin / sulbactam, cefuroxime and piperacillin / tazobactam, 37.5% resistant to ceftazidime, ceftriaxone and colistin and 25% resistant to ceftazidime. The occurrence of gram-negative associated with clinical infections and multidrug isolated in groundwater necessitates the implementation of stricter hygienic and sanitary control program of that water, as well as promoting the dissemination of knowledge about the quality of groundwater for these communities.

**Keywords:** resistance profile; Wells; Water contamination;

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