

TITLE: MICROORGANISMS PRESENT IN AIR-CONDITIONED LIBRARY ENVIRONMENT

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The air pollution in an air-conditioned environment has become the object of study as sealed buildings arose and that people have been spending most time of their time inside these environments, whether spontaneously or by force of labor journey. For this reason, this study objectified the realization of a microbiological diagnosis starting from the evaluation of pollution by particulates in the air, in a public library of the city of São Luís – MA. In order to obtain a representative sample, four collections were made in ten distinct spots for a period of a year. For the collection of bioaerosols, the technique of deposition was applied, where the microparticles present in the air with the aid of gravity fall and deposit themselves on the Petri dish that already contains the suitable mean of culture for its growth. The Petri dishes remain open containing the means of culture Agar Sabouraud, Agar MacConkey and Agar Muller Hinton, for a period of 30 minutes. After the exposure the dishes were incubated at 27°C for a period of until 72 hours. In sequence, the colonies were quantified and purified, through the technique of exhaustion by furrows and then identified. For the bacteria we utilized the technique of Gram staining and for the fungi we used the microculture (filamentous) and the ChromAgar (yeast). In all it was possible to identify 1,740 microorganisms, being 390 different microorganisms. It was possible to identify positive and negative Gram bacteria, the fungi most commonly found in these collections were the *Aspergillus sp.*, *Penicillium sp.* e *Candida spp.* genre. Therefore, with the used techniques, we can affirm that there are different microorganisms present in artificially air-conditioned environments. Thereby the results obtained were compared to the legislation in force, observing recommendations of the World Health Organization and ANVISA resolution #9 from January 16<sup>th</sup> 2003.

**Key words:** Libraries, Particulate Matter, Microorganisms.