

TITLE: THE QUALITY OF THE INTERIOR AIR OF AN AIR-CONDITIONED ENVIRONMENT FROM A LIBRARY.

AUTHORS: BARROS, A.L.S; MOTA, A.G. ; DIAS, L. D. ; DIAS, M.D.S. ; AMARAL, S.S. ; MARTINS, S.A.; SILVA, L.C.; SILVA, L.M.L. ; MIRANDA, R.C.M.; VILLIS, P.C.M.

INSTITUTION: CEUMA UNIVERSITY, SÃO LUIS-MA (JOSUÉ MONTELO STREET, 1 - RENASCENÇA II, SÃO LUIS - MA, ZIP CODE: 65075-120)

The air we breathe in air-conditioned environment intern rooms has come to be the object of study in the means that people spend over 80% of their time inside those rooms. Due to that, these air-conditioned environment surroundings need suitable maintenance in their air conditioning equipments, in order to avoid consequences to man's health. Against the exposed it was objectified to evaluate the quality of the air within a private library in the city of São Luís – Ma. For such, four collections were realized in ten distinct spots in the period from April 2018 to April 2019. In this period, it was possible to evaluate the concentration of microorganisms, the physical-chemical parameters of environmental comfort such as temperature, relative air humidity, noise and CO₂ concentration. For the microorganisms collection the technique of deposition based on the attraction of aerosols by culture means Agar (Sabouraud, MacConkey and Mueller Hinton) were used and with the aid of gravity deposition of those occurs on the dish. After the exposure the dishes were incubated at 27°C for a period of up to 72 hours. In order to evaluate the temperature and humidity of the intern surroundings of the library, a Digital Thermo Hygrometer of the brand Instrutherm was used, with temperature variation from -20°C to 60°C and humidity from 10 to 95%. For the noise level measurement within the intern surroundings it was used the sound level meter of the brand Instrutherm, properly calibrated. And finally to the measurement of CO₂ concentration it was used the meter model AK786 of the brand ASKO, properly calibrated. All in all, it was possible to quantify 3,862 microorganisms colonies, the most commonly found fungi identified belong to the genre *Aspergillus sp.*, *Penicilium sp.* and *Candidas*. The data obtained was compared to the Brazilian legislation in force, offering spotlight to the ANVISA resolution nº 09 from January 16th 2003.

Key words: Libraries, Particulate Matter, Microorganisms.