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Sanitary conditions in lecture-halls: microbial contamination and microclimatic parameters

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Abstract. The aim of the paper was to evaluate the hygiene conditions (microclimatic parameters, CO_2 concentration and microbial contamination) in lecture-halls during the day. Classical plate counts and rapid ATP luminescent assay have been employed to determine the microbial contamination on surfaces and in air. Microclimatic parameters and CO_2 concentration have been measured by appropriate instruments, before and after the teaching activities, and during the midday break, when done. The microclimatic conditions resulted satisfying during all day in some lecture-halls, but quite never in the comfort ranges in another one. The bacterial contamination in air was very low in any case; the hygienic conditions of the surfaces were optimal in the morning. The CO_2 concentration was increasing, over the recommended limit, during the day in all the lecture-halls. The cleaning procedures were optimal; the same care was not always applied to ensure good microclimatic conditions. Many people intensively visit the lecture-halls for several hours per day; to maintain comfortable climatic conditions and acceptable hygiene levels is fundamental to avoid sanitary problems. The luminescent assay, rapid and in good accordance with the plate count, can be very useful to monitor the microbial contamination levels.

Keywords: Microclimatic parameters, microbial contamination, ATP luminescent assay, lecture-halls, indoor CO_2 concentration

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