ASSESSMENT OF FUNGAL CONTAMINANTS IN AIR-CONDITIONED ROOMS OF A TERTIARY ACADEMIC INSTITUTION AND THEIR HEALTH IMPLICATIONS

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ABSTRACT

An assessment of the fungal contaminants in air-conditioned rooms of an academic tertiary institution in Dasmariñas City, Cavite and their health implications was determined. The study was conducted from April through September 2011 in the laboratory rooms and offices at the De La Salle University-Dasmariñas campus. The Gravitational Petri Plate Method was used for sampling. The samples were taken once in the morning 30 minutes before the air-conditioning units were turned on and in the afternoon 30 minutes after the units were turned off. Fungal colonies were identified based on colonial forms and microscopic examination. A survey was conducted to determine the prevalence of allergic rhinitis among the students, faculty and staff using the Paulo Campos Hall (PCH) and College of Science (COS) buildings. Linear Regression Analysis was applied to determine the relationship between fungal density and predictor variables such as relative humidity, temperature, time of sampling, and type of room. The results showed that *Cladosporium* spp., *Aspergillus* spp., *Mucor* spp., and *Penicillium* spp. were the four major genera identified based on taxonomic keys. These fungi were correlated to the predictor variables. There was a significant correlation found between temperature ($p=0.0297$) and relative humidity ($p=0.0192$) on fungal density at the time of sampling. The prevalence ratio of allergic rhinitis among the teachers and students of a tertiary academic institution showed that there was a 1.532 higher probability of having allergic rhinitis when occupying offices and laboratory rooms compared to those that have not used the rooms but have experienced allergic rhinitis. There was a significant correlation ($p=0.05$) between allergic rhinitis and fungal density. This study implies that there are possible health implications due to the growth of fungal flora in air-conditioning units; therefore, the quarterly cleaning of the air-conditioning units is recommended.

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