FUNGAL OCCURRENCE IN CONCRETE SURFACES OF HISTORIC BUILDINGS IN BELÉM, PARÁ, BRAZIL

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Summary:

Historic monuments and buildings exposed to physical, mechanical, chemical and biological conditions are affected in its internal compositions and surfaces. Fungi, eukaryotic organisms with micro and macroscopic species stand out as biological agents strongly related to degradation of monuments and historic buildings. Moreover, the colonization of construction surfaces and buildings by these microorganisms may cause aerosolization of fungal spores and other structures with allergenic potential and / or causing health damage to humans and other animals. The Amazon region, with predominantly equatorial climate, has extremely favorable climatic conditions for the development of fungi. The Forte do Castelo (Castle Fort) is a landmark, built at the time of the founding of the city Belém, in the sixteenth century , and one of its most visited tourist attractions. The aim of this study is to investigate the occurrence of filamentous fungi on surface samples from historical buildings. Samples for analysis were collected from three surfaces with possible signs of deterioration and/or stains from the walls of the complex of this fortification. Surface samples were collected by swabbing with a moistened saline solution with chloramphenicol. For the assay 100 µl of this saline was then inoculated by the spread plate microbiological technique into Petri dishes containing Sabouraud Agar with chloramphenicol, in duplicate. After growth, the colonies were isolated in agar Sabouraud. The identification was based on macroscopic and microstructural characteristics of the colonies according to parameters of classical taxonomy and professional literature. One hundred and fifty-three colonies were isolated and identified to date the following taxa: *Acremonium, Alternaria, Aspergillus, Cladosporium, Curvularia, Fusarium, Nigrospora, Paecilomyces, Pestalotiopsis, Penicillium* and *Trichoderma*, with a predominance of *Penicillium* and *Cladosporium*. The fortification presented itself well preserved with few suitable areas for the collection. Genera with potential allergens and cause of opportunistic infections were detected among the isolates. Although cosmopolitan, the development of these agents in building materials may contribute to the deterioration of these substrates. Case studies are required to evaluate the biodeteriorative potential of these microorganisms in building materials.

Keywords: Amazon; biodeterioration; filamentous fungi.

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