Environmental Engineering and Management Journal xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
http://www.eemj.icpm.tuiasi.ro/; http://www.eemj.eu

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EXPLORING THE INDOOR ENVIRONMENT OF HERITAGE BUILDINGS AND ITS ROLE IN THE CONSERVATION OF VALUABLE OBJECTS

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Abstract

This study is an attempt to monitor the indoor microclimate and the microbiological contamination of some indoor objects inside a wooden Orthodox church. Standard microbiological techniques were used for the isolation and identification of the fungi present in the dust of the superficial surface of the paintings chosen to be investigated for biodeterioration. Samples were taken from approximately 1 cm^2 of the surface of the analysed paintings (cotton canvas, wood, on primer) using the cotton swab method. The cultures of fungus isolated from the studied paintings were identified based on their morphological and microbiological characteristics. The identity of isolates was established, based on the smear microscopic examination, using the lactophenol blue cotton staining procedure. Based on the morphological characteristics of conidiophores, the following fungal genera were determined to be present in the dust of the studied paintings: *Streptomyces* sp., *Arthrographis* sp., *Beauveria* sp., *Aspergillus* sp., *Penicillium* sp., *Alternaria* sp., *Cladosporium* sp., and *Streptomyces* sp. The current state of paintings, influenced in time by temperature, humidity, brightness, microbial contamination, and other factors, was investigated and mapped. The detailed analysis contributes to the conservation stage of the historic monument investigation, enhancing the existing data in the environments destined for the conservation of valuable objects. The continuous monitoring of the indoor microclimate, together with the maintaining of good hygiene, cleaning conditions and proper ventilation, could successfully contribute to the slowing down of painting degradation within the wooden church monument.

Key words: contamination, historic wooden church, microclimate, painting

Received: December, 2018; Revised final: April, 2019; Accepted: May, 2019

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