

Annual Congress on

# Mycology and Fungal Infections

November 16-17, 2017 Atlanta, Georgia, USA

## Detection and diagnosis of wood decay fungi in wooden heritage using different image techniques

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This study was based on the current deteriorated status of wood slats from locomotive turntable of Provincial Railway Station La Plata. Wood specie of the slats was determined by conventional methods being *Schinopsis sp.* while fungal species was determined morphological being *Phellinus chaquensis* (white-rot fungus). Determination of the fungus and its *in-vitro* cultural features were based on Iaconis and Wright and Robledo and Urcelay. Fungal degradation wants be measured by non-destructive methods: area occupied by mycelium and basidiomata were observed by x-ray radiography and computer tomography (CT) and quantified by image analysis with Image J software. Greyscales of the images obtain indicated density changes, being black scale the less dense and white scale the densest. To establish the microstructural wood deterioration (cell wall), scanning electron and optical microscopy (SEM and OM) images were analyzed. It was concluded that deterioration analysis by images is a non-destructive alternative methodology, which allows to measure structural condition of material. This is essential in heritage conservation because it allows defining correctly the deteriorated status useful to planning a conservation strategy, avoiding the asset loss.

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