

ASSESSMENT OF FUNGAL GROWTH AND COLONIZATION RATE ON SILICONE: PRELIMINARY RESULTS

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The Mycology Laboratory of Dip.Te.Ris. (University of Genoa) was asked to investigate the development of “black” fungi on synthetic compounds, specifically silicone.

Fungi both indoor and outdoor can colonize a wide range of inorganic substrates (Gadd, 2004). Several studies show that home dampness, particularly in bathrooms, kitchen, and basements, increases indoor mould burden. Mould development often causes substrate biodeterioration and aesthetic problems. Discoloration by fungal contamination constitutes a hygiene problem and spoils the appearance of bathrooms (Ara *et al.*, 2004). Sometimes, fungi occurrence in domestic environment is associated with an increase of allergic symptoms (Ara *et al.*, 2004; Kovesi *et al.*, 2006).

The aim of this study is to verify the fungal ability to colonize different kinds of silicone added with antifungal agents. In order to test fungal colonization capability, two strains of *Phoma* sp. were isolated on Malt Extract Agar (MEA) from biodeteriorated silicone present in a bathroom. The strains were cultivated on Oatmeal Agar (OA) and MEA media. Then different kinds of silicone were put in a set of 16 Petri dishes and inoculated with *Phoma* previously isolated. The dishes were incubated at 80% RH and 24°C and lighting was turned on and off every 12 hours. During the experiment the samples were kept at controlled environmental conditions in order to reproduce the most favorable conditions for fungi growth that can be normally present in a generic bathroom.

After eight months, the fungi developed on all the dishes inoculated. At the moment our evaluations are only qualitative and addressed to establish the capability of fungi to colonize the kinds of silicone taken into account. The results achieved show that fungi are able to grow on all the silicone kinds almost with the same speed except for a type of silicone, which seems to partially inhibit the start up of fungi growth.

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