

BIOBURDEN CHARACTERIZATION IN PORTUGUESE DWELLINGS

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Several studies have indicated that bioburden presence in the indoor environment is associated with serious health effects. Passive sampling methods are easy to use and represent a long-term integrated sample. This study intended to characterize bioburden and assess the azole resistant fungi through electrostatic dust cloth from 23 dwellings from Aveiro.

Each EDC (a total of 69 indoor EDC in each season – summer and winter) were placed at bedroom, kitchen and living room from each dwelling for 30 days. EDC wash suspension was inoculated onto 4 different culture media for bioburden characterization. Suspensions were also inoculated onto saboraud screening media supplemented with 4 mg/L itraconazole (ITC), mg/L voriconazole (VCZ), and 0.5 mg/L posaconazole (PCZ). Molecular detection of toxigenic *Aspergillus* sections will be performed shortly. Dwellings characteristics were collected covering several environmental parameters.

Regarding summer season fungal contamination in one of the two applied media ranged from 448 to 74742 CFU/m². *Chrysonilia sitophila* (68.8%) was the most frequent, followed by *Rhizopus* sp. (16.54%) and *Penicillium* sp. (7.99%). Total bacterial load ranged from 1 to 581 CFU/m². Gram-negative bacteria load ranged from 1 to 14 CFU/m² and was found in 10 sampling places. Fungal growth in azole-supplemented media was observed in 55 EDC samples, ranging from 1 to 24881 CFU/m². Of note: *Penicillium* sp. load ranged from 1 to 1493 CFU/m² in azole-supplemented medium (ITC, VCZ and PCZ); *Rhizopus* sp. load ranged from 1 to 24881 CFU/m² in azole-supplemented medium (ITC and VCZ). No *Aspergillus* sp. colonies were observed in azole-supplemented media. There were no significant correlations between cleaning frequency and the footwear use indoors with the bioburden observed.

Bioburden characterization in Portuguese dwellings was obtained by a simplified sampling method (EDC). Further studies should be performed using this sampling method in chronically immunocompromised patients' dwellings, such as cystic fibrosis or cancer and transplant and hemodialysis patients.

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