Isolation and identification of mold from naturally ventilated preschools in urban and suburban area in Selangor

ABSTRACT

Mold includes airborne particles of biological origin. Exposure to mold in damp buildings has been associated with the risk of experiencing health problem. Children may be exposed to mold spores through the respiratory tract, when they inhale or through skin contact. This study is a comparative cross-sectional study which was carried out in Malay preschools. A total of 270 respondents and 12 preschools from both locations (Puchong and Hulu Langat) were involved in this study. This study aimed at identifying different types of fungi present in selected preschools in Selangor. Indoor isolation of fungi was done using an instrument known as PBI Duos SAS Super 360™bioaerosol sampler and Sabouraud dextrous agar (SDA) was used for the cultivation and identification of mold in selected preschools. Mold colonies were represented as colony forming units (CFUm3). Further identification of fungi was done based on their macroscopic and microscopic characteristics. Total of 12 preschools and 36 houses were selected to participate in this study. Mold isolated from preschools in study and comparative area include; Candida albican, Aspergillus niger, Microsporium canisand Penicillium notatum. Analysis has shown a significant difference between mold level which were isolated in industrial and suburban preschools (p<0.05) for preschools and homes sampled. In conclusion,this study found that indoor exposure to mold were higher among preschools in the urban area than those in suburban area. Water damaged materials provide a good environment for the growth and multiplication of mold.

Keyword: Mold; Indoor air quality; Preschools