Mold contamination and air handling units (Straus et al)

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Mold contamination and air handling units.

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An investigation was conducted on selected locations in air handling units (AHUs) to (a) identify common mold species found on these locations, (b) determine whether some locations (and subsets) featured mold growth sites more frequently than others, (c) ascertain whether the operating condition of AHUs is related to mold contamination, and (d) provide a basis for a microbial sampling protocol for AHUs. A total of 566 tape lifts and 570 swab samples were collected from the blower wheel fan blades, insulation, cooling coil fins, and ductwork from 25 AHUs. All AHU conditions were numerically rated using a heating, ventilation and air-conditioning (HVAC) survey. Results showed that Cladosporium sp. fungi were commonly recovered in terms of growth sites and deposited spores, and they were found mainly in the blower wheel fan blades, the ductwork, and the cooling coil fins. Subsections of the fan blades, insulation, and cooling coil fins showed no preferred area for mold growth sites. Other organisms such as Penicillium sp., Aspergillus sp., and Paecilomyces sp. were recovered from the cooling coil fins and insulation. Because of the widespread prevalence of Cladosporium sp., there was no relationship between mold growth and operating condition. However, the presence of different species of molds in locations other than the blower wheel blades may indicate that the AHU condition is not optimal. A suggested microbial sampling protocol including interpretations of sample results is presented.

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