

## EPA BASE Study Findings - Airborne Biological Contaminants:

### Fungal Categories

Category Name	Fungi in Category	Characteristics
<b>Leaf-surface (phylloplane) fungi</b>	<i>Alternaria</i> spp. <i>Cladosporium</i> spp. <i>Epicoccum</i> spp.	Outdoor sources (growth on leaf surfaces); Indoor sources possible but less common than for the other fungal categories  Presence in indoor air generally reflects outdoor air ventilation
<b>Soil fungi</b>	<i>Aspergillus</i> spp. <i>Penicillium</i> spp.	Outdoor sources (growth in soil) and possibly indoor sources  Presence in indoor air generally reflects outdoor air ventilation and the contribution of indoor growth, if any
<b>Water-requiring (hydrophilic) fungi</b>	<i>Aspergillus fumigatus</i> * <i>Botrytis</i> spp. <i>Fusarium</i> spp.* <i>Stachybotrys</i> spp.* Yeast <i>Sporobolomyces</i> spp. <i>Ulocladium</i> spp. Zygomycetes	Outdoor sources (growth on moist organic matter) and possibly indoor sources  Presence in indoor air generally reflects outdoor air ventilation and the contribution of indoor growth, if any  Higher prevalence or concentration indoors may indicate the presence of excess water
<b>Potentially toxigenic fungi</b>	<i>Aspergillus flavus</i> <i>Aspergillus fumigatus</i> * <i>Aspergillus versicolor</i> <i>Fusarium</i> spp.* <i>Stachybotrys</i> spp.*	Outdoor and possibly indoor sources  Presence in indoor air generally reflects outdoor air ventilation and the contribution of indoor growth, if any  Presence indoors may indicate a concern for the health of the occupants

\*Fungal groups included as both water-requiring and potentially toxigenic fungi: *Aspergillus fumigatus*, *Fusarium* spp., and *Stachybotrys* spp.

Source: Macher, J.M.; Tsai, F.C.; Burton, L.E.; Liu, K.S.; Waldman, J.M. 2001. Prevalence of culturable airborne fungi in 100 U.S. office buildings in the Building Assessment Survey and Evaluation (BASE) study. In: Indoor Air Quality 2001. Moisture, Microbes, and Health Effects: Indoor Air Quality and Moisture in Buildings. November 4-7, 2001. San Francisco, CA. Atlanta, GA: ASHRAE.