

Featured Research Studies

Med Pr. 2008;59(4):333-45.

[Occupational exposure to mycotoxins in various branches of industry]

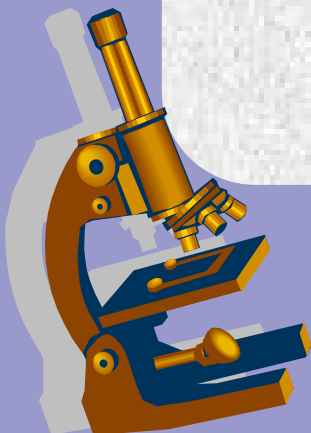
[Article in Polish]

Soroka PM, Cyprowski M, Szadkowska-Stańczyk I.

Zakład Środowiskowych Zagrożeń Zdrowia, Instytut Medycyny Pracy im. prof. J. Nofera, Łódź.

Mycotoxins are a quite numerous group of substances released as metabolites by molds, which badly affect human and animal health. Their impact on organisms resulting from alimentary exposure is well recognized, but the mechanisms by which they exert their health effects after inhalation exposure are still poorly investigated. The aim of this work was to review the literature concerning the outcomes of occupational exposure to mycotoxins present in the work environment. The author discusses the major mycotoxin classes, their chemical structure, some physicochemical properties and biological activity properties. This paper summarizes the results of investigations on the impact of occupational exposure to molds present in the workplace air in various branches of industry. Problems of identifying the mechanism of health effects exerted due inhalation exposure to mycotoxins are also discussed. This review shows that there is lack of good hygiene standards and legislation regulating the presence of these compounds in the workplace air. These is due to insufficient number of analyses aimed at estimating short-term inhalation exposure to mycotoxins and lack of monitoring of long-term exposure and its health effects. The authors concludes that occupational exposure to mycotoxins and their role in the development of pathological changes in the respiratory system require further investigations.

PMID: 19143225 [PubMed - indexed for MEDLINE]



Rev Iberoam Micol. 2008 Dec 31;25(4):232-6.

[Aspergillus spp. in risk areas of transplant patients in a university hospital]

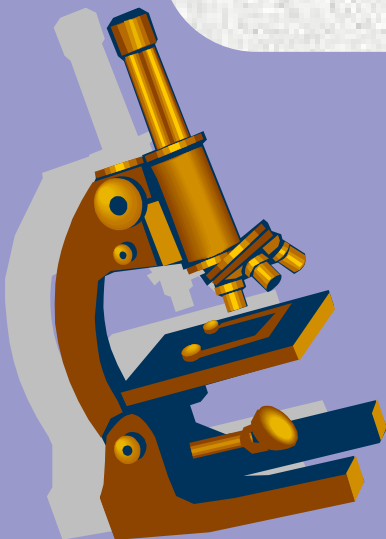
[Article in Spanish]

Cárdenas MX, Cortes JA, Parra CM.

Grupo de Enfermedades Infecciosas, Departamento de Microbiología, Facultad de Ciencias, Pontificia Universidad Javeriana, Bogotá, Colombia. claudia.parra@javeriana.edu.co

As a consequence of the increase in the number of immunocompromised patients, cases of aspergillosis, due to the opportunist character of this fungus, have increased considerably. *Aspergillus fumigatus*, *Aspergillus flavus*, and *Aspergillus niger* have been found in air and water samples of the majority of investigated hospitals. The aim of the present study was to investigate the presence of aspergilli in transplant patients areas at the Hospital Universitario of Bogotá, Colombia. Samples of air were collected using the MAS-100 Air Sampler from each of the investigated areas. A sample of 100 ml of water was also recovered from these areas. All samples were taken for triplicate and were cultured in 2% Sabouraud Dextrose Agar. The average of aspergilli in air samples was 2.8 CFU/l corresponding to *A. flavus*, *A. niger*, *Aspergillus versicolor* and *Aspergillus terreus*. In water samples, the average was 17.1 CFU/l corresponding to *A. flavus* and *Aspergillus clavatus*. Because potentially pathogenic *Aspergillus* species were found in the hospital areas where transplant patients are usually kept, active surveillance and a high clinical suspicion should be considered in those patients. Since *Aspergillus* infections haven't been found so far, a higher fungal load and other host factors might be needed to facilitate the infection.

PMID: 19071892 [PubMed - indexed for MEDLINE]

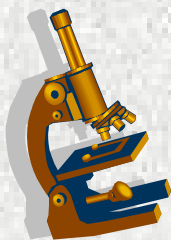


Crit Rev Toxicol. 2009;39(2):139-93.

Microbial volatile organic compounds.

Korpi A, Järnberg J, Pasanen AL.

University of Kuopio, Department of Environmental Science, Kuopio, Finland.
anne.korpi@uku.fi



Microbial volatile organic compounds (MVOCs) are a variety of compounds formed in the metabolism of fungi and bacteria. Of more than 200 compounds identified as MVOCs in laboratory experiments, none can be regarded as exclusively of microbial origin or as specific for certain microbial species. Thus, the recognition of microbially contaminated areas by MVOC measurements is not successful with current methods. In this review, the basic physical and chemical properties of 96 typical MVOCs have been summarised. Of these, toxicological and exposure data were gathered for the 15 MVOCs most often analysed and reported in buildings with moisture and microbial damage. The most obvious health effect of MVOC exposure is eye and upper-airway irritation. However, in human experimental exposure studies, symptoms of irritation have appeared at MVOC concentrations several orders of magnitude higher than those measured indoors (single MVOC levels in indoor environments have ranged from a few ng/m³ up to 1 mg/m³). This is also supported by dose-dependent sensory-irritation response, as determined by the American Society for Testing and Materials mouse bioassay. On the other hand, the toxicological database is poor even for the 15 examined MVOCs. There may be more potent compounds and other endpoints not yet evaluated.

PMID: 19204852 [PubMed - indexed for MEDLINE]

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