

Mold Fact Sheet

Awareness of indoor air quality in homes and public buildings and its impact on human health has dramatically increased over the past decade. In response, mold inspections for residential homes and public buildings are common occurrences. Most inspections are completed after an incidence of flooding, concerns are raised by the inhabitants or the building is the subject of a property transaction.

What Is Mold and Why Is It Harmful?



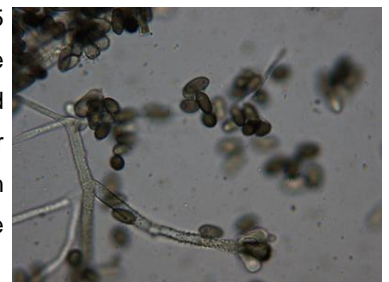
Molds are fungi that grow in damp environments. They play an extremely important role in the outdoor environment by breaking down dead organic materials and helping to maintain a healthy and productive environment. While there are many thousands of species in the outdoor air, only approximately 30 varieties exist indoors. The presence of these molds in the indoor environment can contribute to structural damage and the decomposition of building materials in addition to adversely affecting the health of the inhabitants.

Molds can produce allergens, irritants and potentially toxic substances. This becomes an issue in regards to human health when these substances become airborne and are inhaled or ingested.

Exposure to molds can produce mild to severe reactions in humans. Mild symptoms of exposure can include eye and skin irritation, nasal congestion, rhinitis and wheezing. More severe reactions like fever and shortness of breath can occur in people with serious allergies to mold or workers exposed to large amounts of mold in occupational settings. Mold exposure has also been proven to trigger asthma attacks.

Paracel's Experience with Mold Analysis

Paracel is the first laboratory in Canada to achieve CALA accreditation to the ISO/IEC 17025:2005 Standard for our culturable fungal speciations and total count genus identifications. This is the same standard to which AIHA offers their accreditation. To achieve this, Paracel participates and maintains proficiency in the AIHA-EMPAT Fungal Culturable and direct exam programs for Proficiency Testing (PT) samples. All of our analysts working with fungal cultures have been trained through the internationally recognized fungal identification course given by the



Centraalbureau Voor Schimmelcultures and Aerobiology Instruction and Research (A.I.R.) through Harvard University. Our combined experience in fungal spore and culture identification is over 25 years.

Paracel can readily accommodate large volume projects, our average sample volumes completed per month exceed 1000 samples.

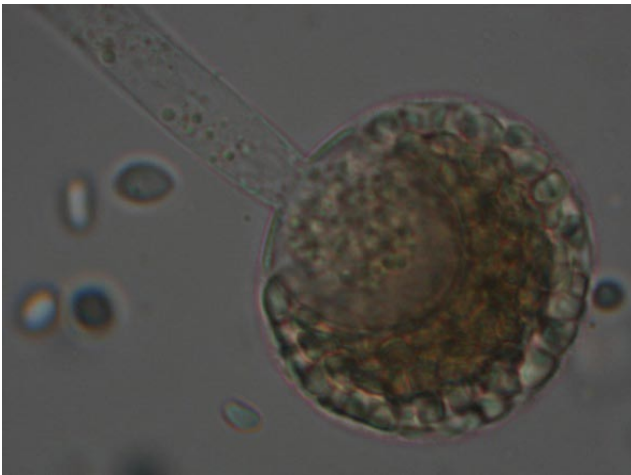
Our clients are located throughout North America and across the world, Paracel is fully insured against Errors & Omissions on a worldwide basis. Within Canada, Paracel meets the pre-qualification requirements for laboratories indicated in the new Canadian Construction Association (CCA) "Mould Guidelines for the Canadian Construction Industry", 2004.

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As part of our commitment to research and improved methodologies, Paracel is the primary industrial sponsor of the Natural Sciences and Engineering Research Council of Canada (NSERC) Industrial Research Chair in Allergens and Toxins in the Built Environment at Carleton University, held by Dr. J. David Miller. This research is leading to improved methods for the rapid and inexpensive detection and quantification of molds. Paracel is in the process of commercializing the results of this research with both Canadian and US partners. Currently, Paracel has this capture ELISA kit available for *Stachybotrys chartarum* with the second ELISA expected later this year for *Penicillium chrysogenum*.

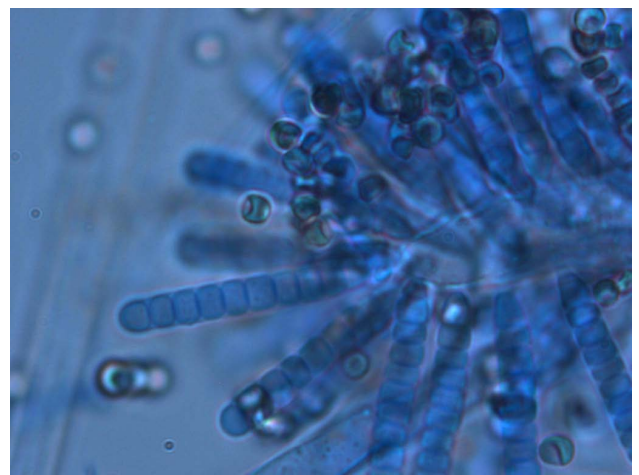
Analytical Information

Our area of specialty is in the identification of molds that are commonly detected in the indoor environment which impact indoor air quality. Quantification and identification is performed by either direct examination by microscope for genus identification or to the 'Gold Standard' for species identification by culturing the sample on media. We also routinely analyse for culturable Bacterial Gram reaction. Sample matrices typically analysed include air, bulk building materials, surface lifts, dust and swabs.



Mucor hiemalis

Standard microscopic examination turnaround time is 4 days but routinely as fast as same day (4 hour minimum) and our turnaround time for culturable analysis is typically 15 business days, depending upon the rate of growth of the isolate. If your project requires same day microscopic analysis, with advance notice, Paracel is able to provide this expedited service to accommodate your project specifics.



Syncephalastrum racemosum

All sample media including Zefon AOC cassettes, tape lifts, swabs, RCS strips for fungal or bacterial analysis or Andersen media plates (2MEA, DG18 or Cellulose – those recommended by the AIHA) are free of charge when the analysis is completed by Paracel. Please call any of the Paracel locations for sampling instructions and supply requests.

References

Field Guide for the Determination of Biological Contaminants in Environmental Samples 2nd ed. (2005). Editors Ling-Ling Hung, Miller, JD, and Dillon, HK. Published by American Industrial Hygiene Association.

Fungal Contaminants in Public Buildings: Health Effects and Investigation Methods, (2004). Health Canada

Building Air Quality: A Guide for Building Owners and Facility Managers, (1991). US EPA