

Environmental Consulting

INSIGHTS

An OVERVIEW of the TOXIC MOLD PROBLEM (TOXIC MOLD THE NEXT ASBESTOS?)

(printer friendly version uses Acrobat Reader)

An Electronic Newsletter
of EEA's Environmental
Consulting Activities
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Marine Ecology Studies,
Air Quality and Noise
studies, and Environmental
Management System (ISO
14000) implementation.

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The presence of toxic mold in the indoor environment has become an increasingly important issue since the early 1990s. Molds and mildew are generic terms used to describe fungi based on where they are found. Mold is used to describe fungi that grow on surfaces and mildew is fungi that grow on fabric. Molds reproduce through the production of spores, which range in size from 2 to 100 microns. Molds only need an available food source and moisture to grow. Temperatures for mold growth range from 40° to 100°F. The relative humidity required for growth is usually above 40 to 60 percent. Mold food sources consist of dead, moist organic matter, such as wood, paper, paint, fabric, soil, etc.

Molds are found in virtually every environment, both outdoors and indoors. Outdoor molds are commonly found in shady, damp areas and places where vegetation is decomposing. Indoor molds are found in showers, basements, HVAC systems and other areas where humidity levels are high.



Examples of Mold Found in Buildings

Toxic mold is a term that we have created to describe molds that are capable of producing mycotoxins. Mycotoxins are natural organic compounds that initiate toxic responses in humans. Human exposure to mycotoxins is through mold spores.

There are thousands of different types of molds that grow outdoors. However, there are three predominant genres, which seem to flourish inside the building: aspergillus, penicillium, and stachybotrys. Stachybotrys, particularly S. Chartarium is the most feared and famous

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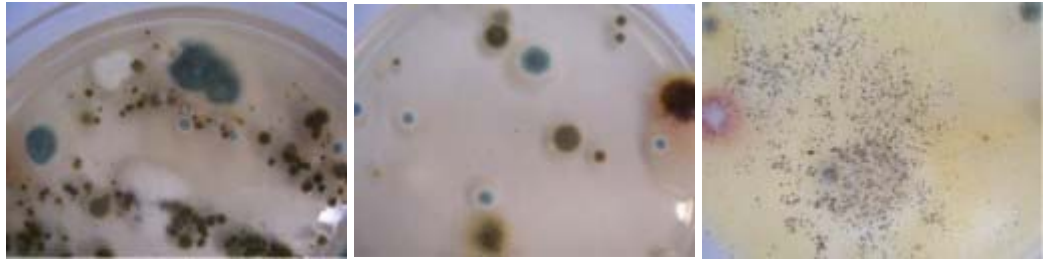
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black mold that is wet and slimy to the touch. Constant moisture is required for its growth, such as water damage, excessive humidity, water leaks, flooding, etc.



Results from a Mold Sampling Kit used in a Residential Dwelling

Unlike asbestos, there are no conclusive links that the scientific community has been able to draw between low levels or temporal mold exposure and human health. There are no biomarkers found in the body that can be measured to determine exposure to specific organisms, such as cancer.

Mold Control Regulations

As of the present, there are no mold-specific federal regulations. The two primary regulators in this field would be the EPA and OSHA. As of 2005, nine states have introduced legislation regarding mold, including New York State. The legislation proposed by the various states is similar to the California Toxic Mold Protection Act. This act requires the adoption of permissible exposure limits for indoor mold and remediation standards. It also requires landlords and sellers of property to provide written disclosure of the presence of mold at properties.

The Potential Mold Liability

Currently, there are no air quality standards relating to mold. There are no work place exposure limits (TLV). However, there is plenty of potential liability and many cases of litigation relating to mold to go around.

The parties most likely to be identified in legal actions are:

- Owners/Landlords
- Architects
- Engineers
- Contractor
- Vendors
- Insurance Companies

EEA, Inc. –
Founded in 1979

There have been numerous lawsuits relating to mold.

Principals

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EEA and Mold Identification Problems

Currently, EEA provides mold detection through an Environmental Assessment. The following indoor air quality assessment relative to mold is performed when any of the following conditions exist.

- Presence of visible fungi
- Musty odors are present
- Evidence or knowledge of water damage
- Symptoms consistent with an allergic or toxic response to molds

An attempt is also made to correlate suspect conditions with high symptom areas. This will help to designate potential hot spots within the building for possible testing.

Testing for Mold

There are several sampling methods available for determining the fungal contamination status that fall under two major categories:

- Bulk sampling
- Air sampling

Bulk Sampling

Bulk sampling is needed to identify specific fungal contaminants. Various methods of bulk sampling include:

- Tape surface sampling
- Swipe sampling
- Scraping of contaminated materials
- Removal of contaminated material

Air Sampling

Air sampling entails simultaneous indoor and outdoor sampling to determine the level of indoor contamination. Since molds exist everywhere in the environment, it is important to determine what the background levels of outdoor mold area. If indoor levels exceed outdoor, then there is likely an indoor source of mold.

The most comprehensive method of air sampling is performed by collecting air cultures. This is done by pumping air with a small sample pump onto a culture medium. The culture medium is used to actually measure the incubation and growth of mold. This process usually takes two weeks to complete.



*Agar Plate Mold Kit
for Airborne
or Swab Sampling*

All fungal sampling analysis is done by microscopic examination. Specific fungi can be identified based on their morphology (shape and color). Each fungi is then counted to determine the number of CFU (colony forming units) per volume (cubic meter).

Mold Control

EEA can provide expertise to achieve mold control in existing buildings through prevention.

- Operation and maintenance procedures
- Inspection and monitoring
- Documentation

In addition, EEA can provide guidance in the management of indoor air quality (IAQ) for large commercial and residential buildings by providing a Building Air Quality (BAQ) Action Plan. The BAQ Action Plan is an eight-step program that is designed to achieve the goal of better indoor air quality in large buildings. EEA recognizes that building maintenance, including IAQ management is costly. However, it should be noted that good maintenance procedures can ultimately result in lower overall operating costs as well as enhancing IAQ.

BAQ Action Plan

Step 1. Designate an AQ Manager

Step 2: Develop an IAQ Profile

Step 3: Address Existing and Potential IAQ Problems

Step 4: Educate Building Personnel About IAQ

Step 5: Develop and Implement a Plan for Facility Operations and Maintenance

Step 6: Manager Processes With Potentially Significant Pollutant Sources

Step 7: Communicate With Tenants and Occupants About Their Role in Maintaining Good IAQ

Step 8: Establish Procedures for Responding to IAQ Complaints

If you would like to know more about testing for mold or mold prevention, contact Allen Serper, P.E. at EEA, Inc. (516) 746-4400 or e-mail aserper@eeaconsultants.com



Mold related links:

EPA Web sites:

A Brief Guide to Mold, Moisture, and Your Home

<http://www.epa.gov/iaq/molds/moldguide.html>

Mold Resources: <http://www.epa.gov/mold/moldresources.html>

OSHA. A Brief Guide to Mold in the Workplace:
<http://www.osha.gov/dts/shib/shib101003.html>

Mold help: <http://www.mold-help.org/>

CDC National Center for Environmental Health. Mold.
<http://www.cdc.gov/nceh/airpollution/mold/default.htm>

CMHC - Canada's National Housing Agency
http://www.cmhc-schl.gc.ca/en/burema/gesein/abhose/abhose_ce08.cfm
<http://www.cal-iaq.org/mold0107.htm>

NYC Guidelines on Assessment and Remediation of Fungi in Indoor Environments
<http://www.nyc.gov/html/doh/html/epi/moldrpt1.shtml>

New York State Department of Health Indoor Air Quality - Mold
<http://www.health.state.ny.us/nysdoh/indoor/docs/mold.pdf>

California Department of Health Services. Mold in My Home: What do I do?
http://www.usaweekend.com/02_issues/020721/020721moldapt.html

In the news...

Mold in mansion is ousting governor
http://www.journalnow.com/servlet/Satellite?pagename=WSJ/MGArticle/WSJ_BasicArticle&c=MGArticle&cid=1031784285212

When mold takes hold
http://www.usaweekend.com/02_issues/020721/020721moldapt.html

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