



MOLD, what it is and where it comes from. August, 2004 - Volume 1, Number 13, Page 1 (By Denis DuMontier, Cambridge Risk Control Department)

The word mold may stimulate your mind to recognize a plant-like substance that is unpleasant and detrimental to the human species. In reality, molds or fungi are essential to our existence and have been present in our world since the beginning of time. However, certain molds if not recognized and controlled can be a nuisance and potentially harmful to our health. Molds as a single or multiple cell bodies cannot be observed with the human eye and will require the use of a microscope to view. Major colonies with substantial growth can eventually be seen with the human eye such as on spoiled bread and cheese.

Basically, mold is one of the major divisions of the plant kingdom in which the plant body is made up of hyphae (branched or simple filaments of the thallus), and that has no chlorophyll and live as parasites. The key word is has no chlorophyll, which indicates that it does not need light to survive. Molds will grow in areas that are moist and have little or no light. Mold must have three things to survive:

- **temperature** - The majority of molds are hardy and usually thrive at 70° F to 90°F, and some can survive in cooler or even freezing temperatures. Intense heat and excessive dryness (ventilation without humidity) are detrimental to mold.
- **a food source** (cellulose materials used in today's buildings; wood, gypsum board, paper, dust, and lint),
- **and water.**

Most indoor environments provide the temperature and food, so the availability of water or moisture will determine whether mold remains dormant or grows and causes a problem. Mold can also remain dormant until thawed or revised by water or high humidity.

Some fungi are used as food sources and in the production of food, such as beer and cheese. Molds are basically beneficial to our world and assist in reducing or breaking down dead organisms. Some molds develop toxins that can destroy certain types of harmful bacteria. This harmful bacteria can also cause disease or an infection to humans and animals. Molds classified in the Penicillin family (*Penicillium*) have become a source of drugs for human use, which can fight and rid the human body of harmful bacteria.

Molds survive because they produce spores (viable seeds), which are one celled or sometimes several-celled, very small reproductive bodies. Spores develop in large quantities and can spread by airborne transmission. Certain species of molds can develop mycotoxins as they grow and it is these mycotoxins that can have an unpleasant effect on humans. There has been more than 200 mycotoxins identified from common molds. Mycotoxins are generally classified as large complex molecules and are not inhaled alone, and adhere to particulate material, such as dust spores or dust particles from the substrate on which the fungus was growing.¹ It is suspected that some types of mold produce VOC's or volatile toxins that can include alcohols, aldehydes, ketones, aromatics, chlorinated hydrocarbons, and sulfur-containing compounds. Therefore, the disturbance of colonies during a cleaning or removal process could liberate additional mold into the air.

One particular mold of concern is *Stachybotrys (black mold)*, which is commonly found in water-damaged buildings and dwellings, as are many other molds. This type of mold has been suspected (scientific data is still being conducted) to cause reactions and symptoms in humans with the respiratory tract being infected. Many of these symptoms are similar to a person who is sensitive to the airborne pollen, which is prevalent during the spring when plants are budding and flowering. Some of the health effects vary and can include itchy skin, irritation of eyes, sore throat, runny nose, and in some documented cases coughing up blood. Individuals with impaired immunity, AIDS, uncontrolled diabetes, or those taking immune suppressive drugs are more susceptible to mold exposure. Molds can also cause asthma attacks in some individuals who are allergic to mold.

Mold growth can occur anywhere in a building where moisture can accumulate. Some areas that this can occur is in the HVAC systems (condensation), bathrooms, utility rooms with water pipes, porous ceiling tile (leaks in roof), and wallboard exposed to moisture. Apparently mold contamination in buildings has also caused large losses regarding property damage, and occupants have filed suits against building owners, contractors, and insurance companies who claim that a fungi has compromised their health and well being.

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2004 Dates To Remember:

January:

Plan Your Safety Training Now!
Call Jody For Training Ideas!
312-381-8208

February:

8-14 Child Passenger Safety Week

March:

16-22 Poison Prevention Week
Workplace Eye Safety Month
Save Your Vision Month

April:

Sports Eye Safety Month
4-10 Intl Building Safety Week
7-11 Workzone Aware. Week
26-30 Playground Safety Week

May:

Clean Air Month
Melanoma Awareness Month
Electrical Safety Month
16-22 National EMS Week
16-22 Poison Prevention Week

June:

National Safety Month

July:

EYE INJURY PREVENTION MNTH

August:

Prepare Your Winter Safety Training!

September:

19-25 Farm Safety/Health Week

October:

5-11 Nat. Fire Prevention Week
20-24 School Bus Safety Week
20-24 Radon Action Week

November:

Take advantage of the weather and do your classroom training!

December:

"3D Month" - National Drunk & Drugged Driving Prevention Month

It's Good To Know:

Dangerous Neckties?

We know that neckties are dangerous around machinery. But did you know that in July of 2003, the British Journal of Ophthalmology warned that men should think twice before cinching up a tight necktie? They reported that it could increase their risk of **glaucoma**, a group of serious eye diseases.

Researchers suspect that a tight necktie constricts the jugular vein, which increases blood pressure and IOP (intraocular pressure). In addition to increasing the risk of glaucoma, wearing a tight necktie during an eye exam could lead to a false diagnosis of illness.

What's The Cost?

A study by the *Journal of American Medicine (JAMA)* has found that US employers lose more than \$60 billion per year on lost productivity. Lost productivity from what?

P A I N !

Headaches, back pain arthritis and the myriad of other muscle and joint afflictions are the cause of this large loss figure.

The study showed that most of the costs are from sub-par job performance as a result of pain rather than absenteeism.

JAMA surveyed almost 29,000 workers in a variety of blue and white collar professions.

It's Our 1st Birthday!!

This issue of the Cambridge Risk Control *Safety Newsletter* marks the first full year of its existence! We're 1!

As always, if you have any questions, comments, corrections, suggestions or article submissions - feel free to email our Newsletter Editor, Jody Warner at

jody_warner@cisgi.com.

Thanks

for a great first year!



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What then is the main cause and prevention of mold? Eliminating water leaks or spills that occur indoors. It is important to act promptly and any water leaks or spillage should be stopped and cleaned promptly. A prompt response (within 24-48 hours) and thorough clean-up, drying, and/or removal of water-damaged materials will prevent or limit mold growth. If mold has contaminated a room or section of a building it must be removed, since the chemicals and proteins, which can cause a reaction in humans, are present even in dead mold. If you do have mold contamination determine how much you have. If the contamination area is too large for immediate clean-up then you should contact a qualified environmental contractor. You can clean small areas of mold contamination with the use of bleach or biocides (water mixed with chlorine bleach, diluted 10 parts water to 1 part bleach, is necessary to prevent mold growth). However, if one references the OSHA and the Center for Disease Control (CDC) criteria (see below) for mold remediation, they suggest caution regarding the use of the aforementioned chemicals. The proper use of PPE becomes important and it is imperative that personnel do not compromise their health with the use of chemicals.

This newsletter article cannot address all of the information available for the remediation of mold. The Occupational Safety and Health Administration (OSHA) has a formal bulletin (<http://www.osha.gov/dts/shib/shib101003.html>) that is easily accessible and gives additional detail good information regarding the above and guidelines for the remediation of mold contamination. Also, the CDC has some good information (<http://www.cdc.gov/nceh/airpollution/mold/stachy.htm>) and a question and answer page concerning *Stachybotrys*. In addition, the EPA has information concerning (<http://www.epa.gov/iaq/molds/moldresources.html>) mold as does and the American Society of Heating, Refrigerating, and Air Conditioning Engineers, Inc. <http://www.ashrae.org/>, and the New York City Department of Health, Bureau of Environmental & Occupational Disease Epidemiology, (<http://www.ci.nyc.ny.us/html/doh/html/epi/moldrpt1.html>).

"A prompt response (within 24-48 hours) and thorough clean-up, drying, and/or removal of water-damaged materials will prevent or limit mold growth."

It is also interesting to note that Indoor Air Quality legislation is being considered in 2004 by 25 state legislatures with approximately 60 pieces of legislation directly or indirectly related to mold. The 2004 proposed legislation can be grouped into the following three categories:

- Mold and mold remediation,
- Schools,
- Public buildings.

Apparently the above-mentioned legislation is an attempt to address the research of mold and establishing PEL's (permissible exposure limits), remediation criteria and guidelines, insurance and property owner concerns, training of mold investigators and licensing, and public education. Further information can be reviewed at the following location <http://www.aeris.org/>.

References

¹. Hodgson, Mark, and Robert Lieckfield Jr., *The Challenges of Mycotoxin Assessment: Part II*, 8,9-10, Compliance Magazine, October 2003.

United States Environmental Protection Agency, *Mold Remediation in Schools and Commercial Buildings*, 2001.

New York City Department of Health, Bureau of Environmental & Occupational Disease Epidemiology, *Guidelines on Assessment and Remediation of Fungi in Indoor Environments*, 2000.

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Safety Resource Center

It's Good To Know:

Floor Conditions ZERO TOLERANCE!

The Cambridge Risk Control Staff urges all of their risk control clients to develop and enforce a **Zero Tolerance** program for all hazardous floor conditions.

NEVER tolerate any hazardous floor conditions such as spilled water, food particles, oils, trip hazards, broken floor tiles, cracked concrete, icy walkways, electrical cords, pipe sections or other dangerous conditions.

Clean it up!

August Is:

a great time to plan, prepare for and schedule your winter safety training classes.

Cold weather, snow, ice and all around uncomfortable conditions can put many industries into a slow period. Many organizations utilize this time wisely in an effort to update everything from equipment, technology and *safety training*.

The time is right for these preparations!

Safety Tip:

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