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HEATON
ENVIRONMENTAL INC.

SERVICES

Mold has and always will be around us. It is a natural part of our environment and a critical element in the decay process. There are hundreds of varieties of mold. For every imaginable environment, there is likely a species of mold which will grow and perhaps thrive.

This section presents information about mold, associated health effects, and procedures used to identify and protect against it. It is important to remember that it is natural in the environment and that we are exposed to spores each day. There are some species which can cause significant health problems, but most are simply irritants or have no effect on us at all. If a person's health or immune system has been compromised or in a case of hypersensitivity, some of the more common molds may cause significant health problems.

Generally speaking, all homes and buildings have mold spores of one kind or another. The homes we and our parents grew up in had mold spores. These spores are carried in by moving air when doors or windows are opened. We can find spores on our clothes, groceries, toys from the yard and anything that enters our home. Recently, media attention over some specific frightening "mold stories" has raised our awareness of mold issues. This awareness has the potential to instill fear and sometimes panic because of what we do not know.

Heaton Environmental does not recommend panic nor complacency, but rather recommends a common sense approach to mold issues.

What is Mold?

Molds are fungi. Molds grow throughout the natural and built environment. Tiny particles of mold are present in indoor and outdoor air. In nature, molds help break down dead materials and can be found growing on soil, foods, plant matter, and other items. Molds produce microscopic cells called "spores" which are very tiny and spread easily through the air. Live spores act like seeds, form new mold growths (colonies) when they find the right conditions.

What does mold need to grow?

Mold only needs a few simple things to grow and multiply:

- Moisture
- Nutrients
- Suitable place to grow
- Temperature (individual species of molds may thrive at different temperatures)

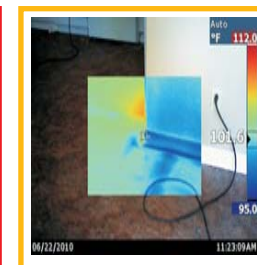
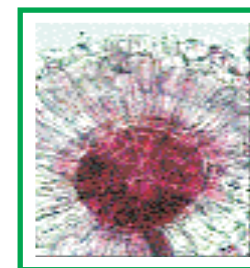
Of these, controlling excess moisture is the key to preventing and stopping indoor mold growth.

Indoor Air Quality
Mold Investigation and Assessment
Mold Remediation Design & implementation
Remediation Risk Assessment
Bacteria Risk and Assessment
Asbestos Inspection & Monitoring
Asbestos Abatement Design and Implementation
Radon
Underground Storage Tanks
Ground & Drinking Water Testing

Specialty Services
Parking Lot Inspection, Assessment & Replacement

Management
Roof Consultation & Project Management
Fuel Storage Tank Installation Implementation
Faulty Design / Catastrophe Assessment & Recovery
Site Development & Implementation

MOLD



REFERENCES

BRUCE ENVIRONMENTAL - BRUCE / JON - 770 439 8908
REMIEDIATION GROUP - FRED - 404 214 1470
GEORGIA WATER EXTRACTION - MATT - 770 840 7000
SERVPRO - JEFF - 770 622 9411 / WES - 770 496 1962
KENNY - 770 739 2355 / SCOTT - 770 887 1962
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MOISTURE CONTROL

COMMON MOLD TYPES

HEALTH EFFECTS

Moisture Control is the key factor to mold control.

Clean and repair roof gutters regularly.

Make sure the ground slopes away from the building foundation, so that the water does not enter or collect around the foundation.

Keep indoor Humidity low. If possible keep the indoor Humidity below 60 % . (ideally between 30 and 50 percent.)

If you see condensation or moisture collecting on Windows, walls or pipes act quickly to dry the wet surface and reduce the moisture / water source.

Condensation can be a sign of high humidity.

Vent appliances that produce moisture, such as clothes driers, stoves and kerosene heaters to the outside where possible.

Use Air-conditioners and / or de-humidifiers when needed.

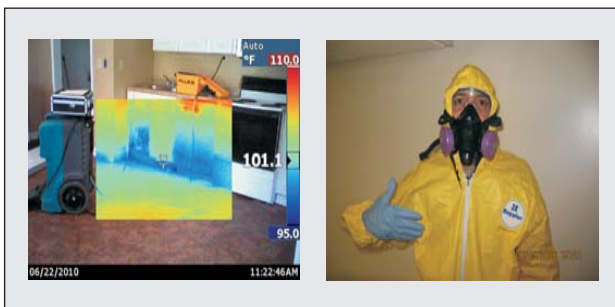
Run the bathroom fan or open the window when showering.

Use exhaust fans or open windows whenever cooking, or running the dishwasher.

Cover crawl space with Polyethylene Vapor Barrier

Floor insulation should be installed with vapour barrier against the subfloor

Items & insulation stored in the Attic should not interfere with cross ventilation, or block air vents.



ALTERNARIA

Description: A very common allergen with an IgE mediated response. It is often found in carpets, textiles and on horizontal surfaces in building interiors. It has been associated with hypersensitivity pneumonitis.



ASCOSPORES

Description: Fungal spores which are from mushrooms. The specific mushroom species can not be identified on the culture plate. Many mushroom spores are reported to be allergenic.



ASPERGILLUS

Description: A wide number of organisms have been placed in the genus. Identification to species is difficult. Often found in aerosol samples. Commonly found in soil, food, cellulose, grains, paint, compost piles, carpet, wallpaper and in interior fiberglass duct insulation. It is reported to be allergenic and may cause hypersensitivity pneumonitis



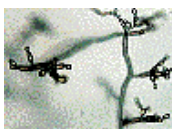
BASIDIOSPORES

Description: Fungal spores which are from mushrooms. The specific mushroom species can not be identified on the culture plate. Many mushroom spores are reported to be allergenic



CHAETOMIUM

Description: It is found on a variety of substrates containing cellulose, including paper and plant compost. It has been found on paper in sheetrock. It is reported to be allergenic.



CLADOSPORIUM

Description: Most commonly identified outdoor fungus. The outdoor numbers are reduced in the winter and often high in summer. It is commonly found on the surface of fiberglass duct liner in the interior of supply ducts. Common cause of extrinsic asthma (immediate-type hypersensitivity)



CURVULARIA

Description: Occasionally a cause of onychomycosis, ocular keratitis, sinusitis, mycetoma, pneumonia, endocarditis, cerebral abscess, and disseminated infection. Most cases are from immunocompromised patients



EPICOCIMUM

Description: Mode of Dissemination: Dry spore carried by the wind. Spores also released by hygroscopic movement. Type I allergies (hay fever, asthma).



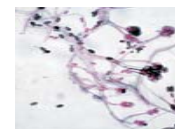
NIGROSPORA

Description: It is found on decaying plant material and soil. It is especially abundant in warm climates. There are approximately 4-5 species. Rarely found growing indoors. It is a distinctive large, dark brown (nearly black), globose spore is readily identifiable on spore trap slides



PENICILLIUM

Description: A wide number of organisms have been placed in the genus. Identification to species is difficult. Often found in aerosol samples. Commonly found in soil, food, cellulose, grains, paint, compost piles, carpet, wallpaper and in interior fiberglass duct insulation. It is reported to be allergenic and may cause hypersensitivity pneumonitis



STACHYBOTRYS

Description: Several strains of the fungus may produce a trichothecene mycotoxin. The toxins are present on the fungal spores. It is a slow growing fungus on media. The organism is rarely found in outdoor samples. It is usually difficult to find in indoor air samples unless it is physically disturbed. The spores will die readily after release. The dead spores are still allergenic and toxigenic.



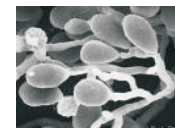
TORULA

Description: The nature of the toxin(s) is unknown. Type I allergies (hay fever, asthma).



TRICHODERMA

Description: This genus is somewhat related to Torula. It may be identified on surfaces by tape lifts. Certain species can be identified in air by culturable samples and certain other species by spore trap samples



ULOCADIUM

Description: It is found in soil, dung, paint, grasses, fibers, wood, decaying plant material, paper, and textiles. It's mode of distribution is dry spore and wind. It's growth indoors is widespread. It is found on gypsum board, paper, paint, tapestries, jute, other straw materials. Ulocladium has a high water requirement.

POTENTIAL HEALTH EFFECTS

All molds have the potential to cause health effects. Molds produce allergens, irritants and in some cases, toxins that may cause reactions in humans. The types and symptoms depend in part, on the types of mold present, the extent of the individual's exposure, their ages and their existing sensitivities to allergies..

- Specific reactions can include the following;
 - * Allergic Reactions (rhinitis, Dermatitis etc)
 - * Asthma
 - * Hypersensitivity Pheumonitis
 - * Other Immununologic Effects

Research on mold and Health Effects is ongoing. The above mentioned is therefore not intended to be all-inclusive.

Some molds such as Stachybotrys and Aspergillus Versicolor, are known to produce potent toxins under certain circumstances. Although some mycotoxins are well known to effect humans and have been shown to be responsible for human health effects, for many mycotoxins, little information is available, and in some cases research is ongoing.