



MOLD REPORT OVERVIEW

The mold identified in this report is often associated with excess moisture on materials such as cellulose (paper) based products and can be a problem in indoor environments at high levels. Mold is naturally present in outdoor environments. Mold can grow on virtually any organic substance, as long as moisture and oxygen are present. When excessive moisture accumulates in buildings or on building materials, mold growth will often occur, particularly if the moisture problem remains undiscovered or unaddressed. It is impossible to eliminate all mold and their spores from the indoor environment.

Mold requires water to grow and it is therefore important to prevent moisture problems in buildings. Some moisture problems in buildings have been linked to changes in building construction practices begun during the 1970's and continued today. These changes have resulted in buildings that are tightly sealed; but may lack adequate ventilation, which can potentially lead to moisture buildup. Building materials, such as drywall are made of cellulose and are highly absorbent, perfect surfaces for mold growth when wet. Moisture problems may include roof leaks, plumbing leaks, landscaping or gutters that direct water into or under the building and unvented combustion appliances such as gas stoves.

Building materials supporting mold growth should be cleaned or replaced as quickly as possible in order to ensure a healthy environment. Specific methods of assessing and remediating mold contamination should be based on the extent of visible contamination and the cause of the damage. The simplest and quickest way to safely clean (remediate) the mold contamination should be used. The use of respiratory protection, gloves and eye protection is recommended. Extensive contamination, particularly if heating, ventilating, air conditioning (HVAC) systems or large occupied spaces are involved, should be assessed and remediated by professionals with training and experience handling environmentally contaminated materials. Smaller areas of contamination can usually be assessed and remediated by building maintenance personnel. Homeowners should address common household sources of mold such as mold found in bathroom tubs or between tiles with household cleansers.

Active mold growth in indoor environments is inappropriate and may lead to adverse health effects. The most common symptoms of mold exposure are runny nose, eye irritation, cough, congestion and aggravation of asthma. Individuals with persistent health problems that appear to be related to mold or other types of air quality contaminant exposure should see their physicians for a referral to professionals who are trained in occupational/environmental medicine or related specialties and are

knowledgeable about these types of exposure. Decisions about removing individuals from an affected area must be based on the results of such medical evaluation. Home or building evacuation is not generally necessary except in cases of widespread mold contamination that is linked to illnesses.

UNDERSTAND TYPES OF MOLD

Allergenic mold is normally not dangerous in low amounts, but can cause allergic or asthmatic symptoms such as wheezing or a runny nose. This mold can be removed safely with the assistance of gloves and the use of respiratory protection, such as a disposable particulate-removing respirator.

Mycotoxic mold can cause serious health effects in humans and animals. Health effects range from short-term irritation to immunosuppression to cancer. If any toxic mold is identified, it is suggested that you seek advice from mold professional for guidance. The average homeowner should **NOT** attempt the removal of this type of mold.

Pathogenic mold can cause serious health effects in persons with suppressed immune systems, those taking chemotherapy, those with HIV/AIDS, or autoimmune disorders. If any pathogenic mold is identified, it is suggested you seek the advice of another mold professional for guidance. The average homeowner should **NOT** attempt the removal of these types of mold.

Results relate only to item(s) analyzed. This report should not be reproduced without the permission from AABS Inspection Services. All samples will be stored for a period of two weeks and then properly discarded. Our laboratory uses Leica microscopes and is technically competent to perform the analysis of indoor air samples that include mold and pollen. All laboratory analysts are research trained, certified and have successfully completed an intensive course of instruction on Fungi and Pollen Identification. Our lab also participates in the AIHA Environmental Microbiology Proficiency Analytical Testing (EMPAT) program. (EMPAT # 163230)

For additional information regarding mold and remediation procedures, please visit www.epa.gov/iaq/molds/intro.html or www.nyc.gov/html/doh/html/ei/eimold.html

INTRODUCTION TO MOLDS

Molds produce tiny spores to reproduce. Mold spores waft through the indoor and outdoor air continually. When mold spores land on a damp spot indoors, they may begin growing and digesting whatever they are growing on in order to survive. There are molds that can grow on wood, paper, carpet and foods. When excessive moisture or water accumulates indoors, mold growth will often occur, particularly if the moisture problem remains undiscovered or unaddressed. There is no practical way to eliminate all mold and mold spores in the indoor environment; the way to control indoor mold growth is to control moisture.

BASIC MOLD CLEANUP

The key to mold control is moisture control. It is important to dry water damaged areas and items within 24-48 hours to prevent mold growth. If mold is a problem in your home, clean up the mold and get rid of the excess water or moisture. Fix leaky plumbing or other sources of water. Wash mold off hard surfaces with detergent and water and dry completely. Absorbent materials (such as ceiling tiles & carpet) that become moldy may have to be replaced.

TEN THINGS YOU SHOULD KNOW ABOUT MOLD

1. Potential health effects and symptoms associated with mold exposures include allergic reactions, asthma and other respiratory complaints.
2. There is no practical way to eliminate all mold and mold spores in the indoor environment; the way to control indoor mold growth is to control moisture.
3. If mold is a problem in your home or school, you must clean up the mold and eliminate sources of moisture.
4. Fix the source of the water problem or leak to prevent mold growth.
5. Reduce indoor humidity (to 30-60%) to decrease mold growth by: venting bathrooms, dryers, and other moisture-generating sources to the outside; using air conditioners and dehumidifiers; increasing ventilation; and using exhaust fans whenever cooking, dishwashing and cleaning.
6. Clean and dry any damp or wet building materials and furnishings within 24-48 hours to prevent mold growth.
7. Clean mold off hard surfaces with water and detergent and dry completely. Absorbent materials such as ceiling tiles that are moldy may need to be replaced.
8. Prevent condensation: Reduce the potential for condensation on cold surfaces (i.e. windows, piping, exterior walls, roof or floors) by adding insulation.
9. In areas where there is a perpetual moisture problem, do not install carpeting (i.e. by drinking fountains, by classroom sinks, or on concrete floors with leaks or frequent condensation).
10. Molds can be found almost anywhere; they can grow on virtually any substance, providing moisture is present. There are molds that can grow on wood, paper, carpet and foods.

HEALTH, ASTHMA AND MOLD

Molds can trigger asthma episodes in sensitive individuals with asthma. People with asthma should avoid contact with or exposure to molds. Molds can also trigger allergies in sensitive individuals.

MOISTURE CONTROL

Water in your home can come from many sources. Water can enter your home by leaking or by seeping through basement floors. Showers or even cooking can add moisture to the air in your home. The amount of moisture that the air in your home can hold depends on the temperature of the air. As the temperature goes down, the air is able to hold less moisture. This is why, in cold weather, moisture

condenses on cold surfaces (for example, drops of water form on the inside of a window). This moisture can encourage biological pollutants to grow.

There are many ways to control moisture in your home:

1. Fix leaks and seepage. If water is entering the house from the outside, your options range from simple landscaping to extensive excavation and waterproofing. (The ground should slope away from the house). Water in the basement can result from the lack of gutters or a water flow toward the house. Water leaks in pipes or around tubs and sinks can provide a place for biological pollutants to grow.
2. Put a plastic cover over dirt in crawlspaces to prevent moisture from coming in from the ground. Be sure crawlspaces are well-ventilated.
3. Use exhaust fans in bathrooms and kitchens to remove moisture to the outside (not into the attic). Vent your clothes dryer to the outside.
4. Turn off certain appliances (such as humidifiers or kerosene heaters) if you notice moisture on windows and other surfaces.
5. Use dehumidifiers and air conditioners, especially in hot, humid climates to reduce moisture in the air, but be sure that the appliances themselves don't become sources of biological pollutants.
6. Raise the temperature of cold surfaces where moisture condenses. Use insulation or storm windows. (A storm window installed on the inside works better than one installed on the outside). Open doors between rooms (especially doors to closets which may be colder than the rooms) to increase circulation. Circulation carries heat to the cold surfaces. Increase air circulation by using fans and by moving furniture from wall corners to promote air and heat circulation. Be sure that your house has a source of fresh air and can expel excessive moisture from the home.
7. Pay special attention to carpet on concrete floors. Carpet can absorb moisture and serve as a place for biological pollutants to grow. Use area rugs which can be taken up and washed often. In certain climates, if carpet is to be installed over a concrete floor, it may be necessary to use a vapor barrier (plastic sheeting) over the concrete and cover that with sub-flooring (insulation covered with plywood) to prevent a moisture problem.
8. Moisture problems and their solutions differ from one climate to another. The Northeast is cold and wet; the Southwest is hot and dry;

the South is hot and wet; and the Western Mountain states are cold and dry. All of these regions can have moisture problems. For example, evaporative coolers used in the Southwest can encourage the growth of biological pollutants. In other hot regions, the use of air conditioners which cool the air too quickly may prevent the air conditioners from running long enough to remove excess moisture from the air. The types of construction and weatherization for the different climates can lead to different problems and solutions.

Should you have the air ducts in your home cleaned? - (Excerpt on duct cleaning and mold follows, please review the entire document for additional information on duct cleaning and mold)

You should consider having the air ducts in your home cleaned if:

There is substantial visible mold growth inside hard surface (e.g. sheet metal) ducts or on other components of your heating and cooling system. There are several important points to understand concerning mold detection in heating and cooling systems:

- Many sections of your heating and cooling system may not be accessible for a visible inspection, so ask the service provider to show you any mold they say exists.
- You should be aware that although a substance may look like mold, a positive determination of whether it is mold or not can be made only by an expert and may require laboratory analysis for final confirmation. For about \$50.00, some microbiology laboratories can tell you whether a sample sent to them on a clear strip of sticky household tape is mold or simply a substance that resembles it.
- If you have insulated air ducts and the insulation gets wet or moldy it cannot be effectively cleaned and should be removed and replaced.
- If the conditions causing the mold growth in the first place are not corrected, mold growth will recur.

INDOOR AIR REGULATIONS AND MOLD

Standards or Threshold Limit Values (TLVs) for airborne concentrations of mold, or mold spores have not been set. Currently, there are no EPA regulations or standards for airborne mold contaminants.

LARGE BUILDINGS AND MOLD

EPA has a number of resources available, you can start with "Building Air Quality: A Guide for Building Owners and Facility Managers" and the

Except from the Building Air Quality: A Guide for Building Owners and Facility Managers, Appendix C – Moisture, Mold and Mildew:

How to Identify the Cause of a Mold and Mildew Problem.

Mold and mildew are commonly found on the exterior wall surfaces of corner rooms in heating climate locations. An exposed corner room is likely to be significantly colder than adjoining rooms, so that it has a higher relative humidity (RH) than other rooms at the same water vapor pressure. If mold and mildew growth are found in a corner room, the relative humidity next to the room surfaces is above 70%. However, is the RH above 70% at the surfaces because the room is too cold or because there is too much moisture present (high water vapor pressure)?

The amount of moisture in the room can be estimated by measuring both temperature and RH at the same location and at the same time. Suppose there are two cases. In the first case, assume that the RH is 30% and the temperature is 70° in the middle of the room. The low RH is probably due to roof surfaces that are “too cold”. Temperature is the dominating factor and control strategies should involve increasing the temperature at cold room surfaces.

In the second case, assume that the RH is 50% and the temperature is 70 degrees in the middle of the room. The higher RH at that temperature indicates that the water vapor pressure is high and there is a relatively large amount of moisture in the air. The high surface RH is probably due to air that is “too moist”. Humidity is the dominating factor, and control strategies should involve decreasing the moisture content of the indoor air.

For additional information regarding mold and remediation procedures, please visit www.epa.gov/iaq/molds/intro.html or www.nyc.gov/html/doh/html/ei/eimold.html

FACTS ABOUT MOLD

New York City Department of Health
Office of Environmental and Occupational Epidemiology

The New York City Health Department has developed this fact sheet to address some of the most common questions and concerns regarding mold.

What is mold and where is it found?

Mold (fungi) is present *everywhere* – indoors and outdoors. There are more than 100,000 species of mold. At least 1,000 species of mold are common in the U.S. Some of the most commonly found are species of *Cladosporium*, *Penicillium* and *Aspergillus*. Mold is likely to grow where there is water or dampness – such as in bathrooms and basements.

How can mold affect your health?

Most types of mold that are routinely encountered are not hazardous to healthy individuals. However, too much exposure to mold may cause or worsen conditions such

as asthma, hay fever, or other allergies. The most common symptoms of overexposure are cough, congestion and a person's individual vulnerability to serious health effects – such as fevers and breathing problems – can occur but are unusual.

How can you be exposed to mold?

When moldy material becomes damaged or disturbed, spores (reproductive bodies similar to seeds) can be released into the air. Exposure can occur if people inhale the spores, directly handle moldy materials, or accidentally ingest it. Also, mold can sometimes produce chemicals called mycotoxins. Mycotoxins may cause illness in people who are sensitive to them or if they are exposed to large amounts in the air. Large exposures are typically associated with certain occupations (e.g. agricultural work).

How does mold grow?

All molds need water to grow. Mold can grow almost anywhere there is water damage, high humidity or dampness. Most often molds are confined to areas near the source of water. Removing the source of moisture – such as through repairs or dehumidification – is critical to preventing mold growth.

What is *Stachybotrys chartarum*?

Stachybotrys chartarum (also known as *Stachybotrys atra*) is a type of mold that has been associated with health effects in people. It is a greenish – black mold that can grow on materials with a high cellulose content – such as drywall sheet rock, dropped ceiling tiles and wood – that become chronically moist or water damaged, due to excessive humidity, water leaks, condensation or flooding.

How can you tell if *Stachybotrys chartarum* is present in your home?

Typically, indoor air levels of *Stachybotrys* are low; however, as with other types of mold, at higher levels health effects can occur. These include allergic rhinitis (cold-like symptoms), dermatitis (rashes), sinusitis, conjunctivitis and aggravation of asthma. Some related symptoms are more general – such as inability to concentrate and fatigue. Usually, symptoms disappear after the contamination is removed.

There has been some evidence linking *Stachybotrys* with pulmonary hemosiderosis in infants who are generally less than six months old. Pulmonary hemosiderosis is an uncommon condition that results from bleeding in the lungs. In studied cases of pulmonary hemosiderosis, the exposure to *Stachybotrys* came from highly contaminated dwellings, where the infants were continually exposed over a long period of time.

What should you do if mold is present in your home or apartment?

Although any visible mold can be sampled by an environmental consultant and/or analyzed by a laboratory specializing in microbiology, these tests can be very expensive – from hundreds to thousands of dollars. There is no simple and cheap way to sample the air in your home to find out what types of mold are present and whether they are airborne. Even if you have your home tested, it is difficult to say at what levels health effects would occur. Therefore, it is more important to get rid of the mold rather than find out more about it. **The most effective way to treat mold is to correct underlying water damage and clean the affected area.**

How should mold be cleaned?

Mold should be cleaned as soon as it appears. Persons cleaning mold should be free of symptoms and allergies. Small areas of mold should be cleaned using a

detergent/soapy solution or an appropriate household cleaner. Gloves should be worn during cleaning. The cleaned area should then be thoroughly dried. Dispose of any sponges or rags used to clean mold.

If the mold returns quickly or spreads, it may indicate an underlying problem such as a leak. Any underlying water problems must be fixed to successfully eliminate mold problems. If mold contamination is extensive, a professional abatement company may need to be consulted.

Will my health or my child's health be affected, and should we see a physician?

If you believe that you or your children have symptoms that you suspect are caused by exposure to mold, you should see a physician. Keep in mind that many symptoms associated with mold exposure may also be caused by many other illnesses. You should tell your physician about the symptoms and about when, how and for how long you think your or your children were exposed.



INSPECTION SERVICES

INDOOR MOLD INFORMATION

ABSIDIA

A zygomycete fungus which is considered common to the indoor environment. Reported to cause mucorosis in immune compromised individuals. The sites of infection are the lung, nasal sinus and skin. Infection may have multiple sites. *Absidia corymbifera* has been an invasive infection agent in neutropenic patients, as well as agents of bovine mycotic abortions and feline subcutaneous abscesses. Species may be confused with *Fusarium* species that primarily produce microconidia in culture. *Fusarium* generally much more rapid growers and produce more aerial mycelium.

ACREMONIUM (Cephalosporium)

Reported to be allergenic. Can produce a trichothecene toxin when ingested. It was the primary fungus identified in at least two houses where the occupant complaints were vomiting and diarrhea. Asexual state of *Emericellopsis*, *Chaetomium* and *Nectriopsis*. It can produce mycetomas, infections of the nails, onychomycosis, corneal ulcers, eumycotic mycetoma, endophthalmitis and endocarditis.

ALTERNARIA

Extremely widespread and ubiquitous. Outdoors it may be isolated from samples of soil, seeds and plants. It is commonly found in outdoor samples. It is often found in carpets, textiles and on horizontal surfaces in building interiors. Often found on window frames. It may be related to Bakers Asthma. It has been associated with hypersensitivity pneumonitis, sinusitis, dermatomycosis, onychomycosis, subcutaneous phaeohyphomycosis and invasion infection. Common cause of Extrinsic Asthma (immediate-type hypersensitivity: Type I). Acute symptoms include edema and bronchospasms, chronic cases may develop Pulmonary Emphysema.

ARTHRIINIUM PHAEOSPERMUM

Widespread saprophyte on dead plant material, particularly swampy grasses considered to be an allergen. This fungus has also been documented in various subcutaneous infections. No toxic diseases are of record to date.

ASCOMYCETE

One of the major classes of fungal organisms. This class contains the "sac fungi" and yeasts. Some ascomycete spores can be identified by spore morphology, however; some care should be exercised with specific identification. Many ascomycete spores are reported to be allergenic.

ASPERGILLUS

This species is considered common to indoor environments. It is widespread in the soil and on plants and is considered a common contaminant of food. It has a musty odor. It is reported to be allergenic. It is commonly being implicated in pulmonary disease in immunocompromised hosts. It has also been reported to cause skin infections.

AUREOBASIDIUM PULLULANS

A cosmopolitan fungus with the main habitat apparently on the aerial parts of plants. Frequently found in moist environments. This fungus should be considered allergenic. This species has been associated with dermatitis, peritonitis, pulmonary infection and invasive diseases in aids patients. Probably acquired by traumatic implantation. May be recovered as a contaminant from human cutaneous sites. No toxic diseases have been documented to date.

BASIDIOMYCETES

One of the major classes of fungal organisms. This class contains the mushrooms, shelf fungi, puffballs and a variety of other macrofungi. It is extremely difficult to identify a specific genera of mushrooms by using standard culture plate techniques. Some basidiomycete spores can be identified by spore morphology, however, care should be exercised with regard to specific identification. Many basidiomycete spores are reported to be allergenic.

BIPOLARIS

A widespread fungus that is most frequently associated with grasses, plant material and soil. Should be considered allergenic. Has also been reported as an infrequent agent of phaeohyphomycosis, particularly fungal sinusitis. It can occasionally cause a corneal infection of the eye.

BOTRYTIS

It is parasitic on plants, vegetables and soft fruits but may also be found in soil. Reported to be allergenic. No toxic or invasive diseases have been documented to date.

CANDIDA

This genus contains a variety of organisms that have been isolated from the environment, as well as human skin and mucous membranes.

CHAETOMIUM

Commonly found on a variety of substances containing cellulose including paper and plant compost. It can readily be found on the damp or water damaged sheetrock. Should be considered allergenic. The thermophilic, neurotropic nature of this organism suggests it is a potentially aggressive pathogen. No toxic diseases have been documented to date.

CHRYSOSPORIUM

Widespread, common in the soil and on plants. Rare agents of onychomycosis, skin lesions, endocarditis and uncommon agents of the pulmonary mycosis adiaspiromycosis. No toxic diseases have been documented to date.

CLADOSPORIUM

Commonly found on dead plants, woody plants, food, straw, soil, paint and textiles. Common cause of Extrinsic Asthma (immediate-type hypersensitivity: Type I). Acute symptoms include edema and bronchospasms, chronic cases may develop Pulmonary Emphysema. Reported to be allergenic.

CURVULARIA

Reported to be allergenic. It may cause corneal infections, mycetoma and infections in immune compromised hosts.

DRESCHLERA

Conidia (spores) dimensions 40-120 x 17-28 microns. Found on grasses and grains and decaying food. It can occasionally cause a corneal infection of the eye.

EPICOCCUM

A common allergen found in plants, soil, grains, textiles and paper products. Secondary invader of damaged plant tissue. Common cause of Type I allergies (hay fever, asthma). No cases of infection have been reported in humans or animals.

FUSARIUM

A common soil fungus. It is found on a wide variety of plants. The fungus also has been found in humidifiers. Symptoms may occur either through ingestion of contaminated foods or inhalation of spores. In severe cases the fungus can produce hemorrhagic syndrome in humans. This is characterized by nausea, vomiting, diarrhea, dermatitis and extensive internal bleeding. Reported to be an allergenic. Frequently involved in eye, skin and nail infections.

GEOTRICHUM

A common contaminant of grains, fruits, dairy products, paper, textiles, soil and water and often present as part of the normal human flora. The species *Geotrichum Candidum* can cause a secondary infection (Geotrichosis) in association with tuberculosis. This rare disease can cause lesions of the skin, bronchi, mouth, lung and intestine.

HYPHAE

Pieces of fungal organisms that cannot be identified as to what genus they are from. They can be considered allergic and are indicative of active growth in the sampling vicinity.

MUCOR

Often found in soil, dead plant material, horse dung, fruits and fruit juice. It is also found in dairy products, animal hair and jute. A zygomycetes fungus which may be allergenic (skin and bronchial tests). This organism and other zygomycetes will grow rapidly on most fungal media. May cause mucorosis in immune compromised individuals. The sites of infection are the lung, nasal sinus, brain, eye and skin. Infection can be multiple sites.

NIGROSPORA

Rarely found growing indoors, often found on decaying plant material and soil. Reported to be allergenic. Common cause of Type I allergies (hay fever, asthma).

PAECILOMYCES

Commonly found in soil and dust, less frequently in air. *P. variotii* can cause paecilomycosis. Linked to wood trimmers disease and humidifier associated illnesses. They are reported to be allergenic. Some members of this genus are reported to cause pneumonia. It may produce arsine gas if growing on arsenic substrate. This can occur on wallpapers covered with paris green.

PAPULOSPORA

This fungi is found in soil, textiles, decaying plants, manure and paper.

PENICILLIUM

Commonly found in soil, food, cellulose and grains. It is also found in paint and compost piles. It may cause hypersensitivity pneumonitis and allergic alveolitis in susceptible individuals. It is reported to be allergenic. Common cause of Extrinsic Asthma (immediate-type hypersensitivity: Type I). Acute symptoms include edema and bronchospasms, chronic cases may develop Pulmonary Emphysema.

PERICONIA

Most commonly identified outdoor fungi. The outdoor numbers reduce in winter. Often found indoors in numbers less than outdoors. It is a common allergen. It is commonly found on the surface of fiberglass duct liner in the interior of supply ducts. A wide variety of plant life are food sources for this fungus. It is found on dead plants, woody plants, food, straw, soil and textiles. Common cause of Extrinsic Asthma. Acute symptoms include edema and bronchospasms, chronic cases may develop Pulmonary Emphysema.

PHOMA

A common indoor air allergen. It is similar to the early stages of Chaetomium. The species may be isolated from soil and associated plants (particularly potatoes). Produces pink and purple spots on painted walls. It may have antigens which cross-react with those of Alternaria. It will grow on butter, paint, cement and rubber. It may cause phaeoptyromycosis, a systematic or subcutaneous disease.

PITHOMYCES

Grows on dead grass and plants. Prolonged exposure can cause facial eczema. Reported to be allergenic. Causes Type II allergies (hay fever type symptoms, asthma).

RHIZOMUCOR/MUCOR

This fungus is reported to be allergenic. It may cause mucorosis in immune compromised individuals. The sites of infection are the lungs, sinus, brain, eye and skin. Infection may have multiple sites.

RHIZOPUS

This fungus is reported to be allergenic. It may cause mucorosis in immune compromised individuals. It is often linked to occupational allergy. The sites of infection are the lung, nasal sinus, eye and skin.

RHODOTORULA

Rhodotorula is commonly identified in indoor air samples. Rhodotorula is reported to be allergenic. They can cause problems if a person has had previous exposure and developed hypersensitivity. Yeast can be allergenic to susceptible individuals when present in sufficient concentrations.

STACHYBOTRYS

Several strains of this fungus (S Atrata, S Chartarum and S Alternata are synonymous) may produce a trichothecene mycotoxin – Satratoxin H – which is poisonous by inhalation. The toxins are present on the fungal spores. This is a slow growing fungus on media. It does not compete well with other rapidly growing fungi. The dark colored fungus grows on building material with a high cellulose content and a low nitrogen content. Individuals with chronic exposure to the toxin produced by the fungus reported cold and flu symptoms, sore throats, diarrhea, headaches, fatigue, dermatitis, intermittent local hair loss and generalized malaise. The toxins produced by this fungus will suppress the

immune system affecting the lymphoid tissue and the bone marrow. The mycotoxin is also reported to be a liver and kidney carcinogen. Affects by absorption of the toxin in the human lung are known as pneumomycosis. This organism is rarely found in outdoor samples. It is usually difficult to find in indoor air samples unless it is physically disturbed. The spores are in a gelatinous mass. The spores will die readily after release. The dead spores are still allergenic and toxigenic.

STEMPHYLLIUM

Isolated from dead plants, cellulose materials, soil and common in air samples in the late summer and fall. Certain species can occur as leaf-spotting parasites of hosts such as tomatoes and other plants. Reported to be allergenic. Often the cause of sinusitis, hay fever and asthma. Can also cause keratomycosis, skin infections, osteomyelitis, pulmonary disease and nasal septum infections.

SYNECEPHALASTRUM

Can cause a respiratory infection characterized by a solid fungal ball.

TORULA

Commonly found in soil, dead herbaceous stems, wood, grasses, sugar beet root, groundnuts and oats. Causes of Type 1 allergies (Hay Fever, Asthma). No reports of human infection.

TRICHODERMA

It is commonly found in soil, dead trees, pine needles, paper and unglazed ceramics. It often will grow on other fungi. It produces antibiotics that are toxic to plants. It has been reported to be allergenic. It readily degrades cellulose.

TRICHOPHYTON

Can cause ring worm, athlete's foot, skin, nail, beard and scalp. Reported to be found on soil and skin.

ULOCLADIUM

Reported to be allergenic. Isolated from dead plants, cellulose materials and textiles. Causes Type II allergies (hay fever, flu-like symptoms).

VERTICILLIUM

Found in decaying vegetation and on arthropods. A rare cause of corneal infections.

WALLEMIA

Found on salted meats, dairy products, textiles, soil, hay and fruits.

YEASTS

Various yeasts are commonly identified on air samples. Some yeasts are reported to be allergenic. They may cause problems if a person has had previous exposure and developed hypersensitivity. Yeasts may be allergenic in susceptible individuals when present in sufficient concentrations.