Assessment World Detected.

Mold Assessment Report

Inspection Date: 07/15/2025

Client Name: Miguel Rolon & Santita Rodriguez

Address: 693 Walkup Dr Orlando FL 32808

Office Center:
95 Merrick Way, floor 3 Coral Gables, FL, 33134

Help Support:
info@awdmultiservices.com

Table of contents

Inspection Details

What We Found

Recommedations

License

Testing

Laboratory Results

Inspection Details

Assessment
World Detected.

PROPERTY OWNER: Miguel Rolon & Santita Rodriguez

ADDRESS: 693 Walkup Dr Orlando FL 32808

WEATHER CONDITIONS: SUNNY

TYPE OF LOSS: HURRICANE MILTON

SOURCE OF WATER STOPPED? YES

What We Found

Assessment
World Detected.

General Areas of Concern:

Mold Growth
If mold is visible, that tells us that the conditions for the growth of mold are in that area. Mold growth is like any science experiment.

If the conditions remain the same, the results of the experiment will be the same. Failure to resolve the underlying conditions that allowed the growth of mold will result in future mold
growth.

Any and all leaks need to be repaired to avoid mold in this area. Mold can live in hidden areas below leaks. As a result, exploration and remediation of hidden areas may be required to identify and correct all mold contamination areas. Any and all leaks and water events
can result in mold growth if not corrected.

Area: Guest Bathroom
Presence of Watermarks: Yes
Presence of Superficial Mold: Yes

Mold Test (1 area)

Miguel Rolon & Santita Rodriguez

694 Walkup Dr, Orlando, FL 32808

9/9 Tasks Completed

AWD Multiservices

,

Admin AWD

mo@awdmultiservices.com

3059278252

Photos of house confirmation

Air Examination Outside

Affected Area

Area Name

Guest Bathroom

Original Area Photos

Presence of Watermarks (Yes / No)

Yes

Presence of Visible Mold (Yes / No)

Yes

Air Examination

Swab Surface

Pictures with Samples Collected

ziploc
693
FOLD & FILL

Remediation Recommended

Assessment
World Detected.

Mold Remediation Procedures ANSI/IICRC S520-2024
In accordance with the ANSI/IICRC S520-2024 Standard, the following steps are recommended for effective mold remediation:

Containment and Isolation: Establish containment barriers around affected areas to prevent the spread of mold spores to unaffected zones. This includes the use of physical barriers and, if necessary, negative air pressure systems to maintain containment integrity.

Moisture Control: Implement dehumidification strategies to reduce moisture levels in affected areas, thereby minimizing conditions conducive to mold growth.

Air Filtration: Utilize HEPA air scrubbers both inside and outside the containment area to capture airborne mold spores and improve air quality during the remediation process.

Material Removal: Carefully remove and properly dispose of contaminated materials that cannot be effectively cleaned. This includes porous materials such as drywall, insulation, and carpeting.

Cleaning and Disinfection: Clean and disinfect all remaining hard surfaces within the affected areas using appropriate cleaning agents and methods. This may include wiping down surfaces with antimicrobial solutions and HEPA vacuuming to remove residual mold spores.

HVAC System Cleaning: If the HVAC system is affected, it should be inspected and cleaned to remove any mold contamination from ducts, coils, and other components.

Post-Remediation: Verification (PRV): Conduct a Post-Remediation Verification to ensure that mold levels have been reduced to acceptable levels and that the remediation objectives have been met. This may involve visual inspections and air sampling by an independent Indoor Environmental Professional (IEP).

Documentation: Maintain detailed records of all remediation activities, including assessments, procedures, and verification results, to ensure transparency and compliance with industry standards.

License

Assessment World Detected.

STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

2601 BLAIR STONE ROAD
TALLAHASSEE FL 32399-0783

Congratulations! With this license you become one of the nearly one million Floridians licensed by the Department of Business and Professional Regulation. Our professionals and businesses range from architects to yacht brokers, from boxers to barbeque restaurants, and they keep Florida's economy strong.

Every day we work to improve the way we do business in order to serve you better. For information about our services, please log onto www.myfloridalicense.com. There you can find more information about our divisions and the regulations that impact you, subscribe to department newsletters and learn more about the Department's initiatives.

Our mission at the Department is: License Efficiently, Regulate Fairly. We constantly strive to serve you better so that you can serve your customers. Thank you for doing business in Florida, and congratulations on your new license!

STATE OF FLORIDA DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

MRSA4956
MOLD ASSESSOR
PEREZ, MARIA FERNANDA

ISSUED: 04/29/2024

Signature
LICENSED UNDER CHAPTER 468, FLORIDA STATUTES
EXPIRATION DATE: JULY 31, 2026

Ron DeSantis, Governor

Melanie S. Griffin, Secretary

STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION
MOLD-RELATED SERVICES LICENSING PROGRAM

LICENSE NUMBER: MRSA4956

EXPIRATION DATE: JULY 31, 2026

THE MOLD ASSESSOR HEREIN IS CERTIFIED UNDER THE PROVISIONS OF CHAPTER 468, FLORIDA STATUTES

PEREZ, MARIA FERNANDA
290 NAVARRE AVE
APT 304
CORAL GABLES FL 33134

ISSUED: 04/29/2024

Always verify licenses online at MyFloridaLicense.com
Do not alter this document in any form.
This is your license. It is unlawful for anyone other than the licensee to use this document.

Testing & Other Recommendations

A visual inspection is conducted to ascertain any visible signs of fungal growth or water intrusion.

Air samples for airborne countable fungal agents are performed using Air-O-Cell Spore Trap Cassettes. Samples are taken indoors and outdoors to compare the genus and numbers of airborne spores.

Potentially contaminated surface samples are performed using a Tape or Swab and analyzed via direct microscopy. Potentially contaminated interstitial wall spaces are performed using a wall cavity check adapter and connected to a Spore Trap Cassette.

There are currently no government regulations or health standards denying the allowable number of airborne fungal spores in buildings. However, there are several accepted protocols and studies that are currently used as industry standards:

IIRC Standards.

The American Conference of Government Industrial Hygienists (ACGIH). ACGIH sates that indoor spore levels are generally less than outdoor levels.

At high levels, most sensitive or immune-compromised individuals will experience symptoms. Acceptable levels for individual genus and species vary since their toxicity, spore size, weight and other features that affect the occupants vary.

Other Recommendations for Microbial Remediation Protocol:

The following areas must be remediated and/or taken into account: Remove and discard all exposed insulation.

Enhanced cleaning of all interior surfaces throughout the specified areas/findings and adjoining spaces as necessary to remove settled spores using a HEPA filter equipped vacuum cleaner including.

Wet wiping of surfaces should be performed on non-porous surfaces where applicable.

Engineering controls (i.e. Air Scrubbers equipped with HEPA filters) should be

Dehumidifiers must be used as necessary to keep the relative humidity below 60%. Bedding, clothing, furniture and all porous surfaces should be cleaned or discarded as instructed by remediator.

Distribute and isolate all air filtration devices throughout the remediated areas. Ensure during the course of the project that no old, contaminated or incorrectly installed filters are used to minimize post remediation testing failures or potentially cross contaminating other areas of the residence.

Any affected materials that are not removed, due to structural concerns or materials adjacent to affected materials that have been removed should be sanded, scrubbed, and cleaned in detail with a detergent agent. If mold substances cannot be completely removed then they shall be encapsulated.

HVAC System to include blower wheel, coil, jacket and all components to remove all dust, debris and visible mold.

Clean surfaces of air handler unit including blower fan, evaporator coils and blower fan compartment with a detergent agent. Detail cleaning of the air handler unit and its closet after all remediation is complete is recommended.

Any affected materials that are not removed, due to structural concerns or materials adjacent to affected materials that have been removed, shall be sanded, scrubbed, and cleaned in detail with a detergent agent. If mold substances cannot be completely removed then they shall be encapsulated.

Continued monitoring of areas for moisture issues is recommended.

All remediation should be performed by a Florida Licensed Mold Remediator. We recommend obtaining price proposals from licensed Mold Remediators prior to completion of the due diligence period to determine actual costs. The costs of remediation can vary greatly.

Protocol for the Containment:

PVC or wood supporting frames shall be utilized to ensure that the containments remain intact during the entire remediation and post-remediation procedures.

The containment must be built using polyethylene sheeting of 6-mil thickness that is clear or opaque and moisture resistant duct tape and spray on glue capable of continuously sealing polyethylene through projects remediation duration.

Ground Fault Circuit Interrupters (GFCI) to be used on all electrical equipment within the containment. The designated onsite clean storage area must be outside.

Polyethylene bags of 6-mil thickness such as those used for asbestos-containing waste. A wet-vacuum cleaner and HEPA-filtered vacuum cleaner. All areas should be cleaned and sanitized and new filters installed prior to beginning the project. All filters shall be disposed of as contaminated waste material at the end of this project.

Remove all contents from the affected areas that will be contained. All applicable contents must be HEPA vacuumed and damp wiped with a mild detergent solution prior to removal. In the event some contents cannot be removed e.g. large furnishings ensure they have been cleaned properly and are sealed with polyethylene sheeting of 6-mil thickness. Electronic equipment should be HEPA vacuumed only.

Once all the affected materials have been removed, HEPA vacuum to remove remaining dust and debris from the containment. Additionally, wipe down the interior of the containment to remove any particular matter that may statically bind to the walls of the containment.

Air Filtration devices with HEPA filtration and in a sufficient number to provide a negative pressure between the containment and outside areas shall be operated continuously from the time containment is established through the time all demolition is completed.

Tips for Containing Mold Growth:

Encourage active airflow throughout the building.

Open windows.

Utilize extractor fans/range hood. Make sure they vent to outside.

Ventilate clothes dryer exhaust to outside.

Do not dry clothes indoors.

Correct any condensation problems with proper ventilation.

Maintain an air gap between furniture and the walls.

Clean and dry windows often, especially single panes and aluminum frames.

Periodically check plumbing fixtures for signs of water leaks.

Maintain comfortable temperatures in all living quarters.

Insulate the home including water pipes.

Keep the relative humidity below 60%, running a dehumidifier if necessary.

Keep houseplants to a minimum. Do not use a live Christmas tree.

Do not store wood indoors.

Frequently clean / change the heating / cooling filter.

Use a vacuum cleaner that incorporates a Hepa-Filter frequently.

Keep a log of health problems date, time, and room associated. Look for patterns.

Post Remediation:

Additional clearance testing must be performed after remediation completion.

Contractor Qualifications:

Mold remediation must be performed by a qualified company that is a State Licensed MRSR with experience and training in microbial remediation.

Disclosure:

It is beyond the scope of our assessment to determine the sources of any past or current water intrusions. The results of our observations represent conditions only at the time of inspection. Thus, this report should not be relied on to represent conditions at other locations, times or dates.

Limitations:

Our opinions are based on the findings and upon our professional expertise with no warranty or guarantee implied herein. This report is intended for the sole use of the client. A-WD Multi Services, LLC accepts no responsibility for interpretation of this report by others. Its contents shall not be used or relied upon by other parties without prior written authorization of A-WD Multiservices, LLC.

It is agreed that A-WD Multi Services, LLC will be compensated for any and all time and preparation in relationship to any and all third party litigation and or insurance settlement at the rate of $425.00 per hour.

Clearance Testing/Post Testing:

Clearance testing should be performed after any type of mold removal or remediation to verify that the remediation was successful in reducing indoor microbial levels of equal to or below ambient outdoors. Testing is to be done after the cleanup phase of the remediation is completed, but prior to any walls being closed or components such as cabinets/flooring being reinstalled.

PRO-LAB®
1675 North Commerce Parkway, Weston, FL 33326 (954) 384-4446

A-WD MULTI SERVICES LLC
1825 PONCE DE LEON BLVD #649
CORAL GABLES, FL 33134

Certificate of Mold Analysis

Prepared for:	A-WD MULTI SERVICES LLC
Phone Number:	(305) 927-8252
Fax Number:	
Project Name:	MIGUEL ROLON
Test Location:	693 WALKUP DR ORLANDO, FL 32808
Report Number:	1864500
Received Date:	July 16, 2025
Report Date:	July 16, 2025

Diana Sauri, Laboratory Director or other approved signatory

Currently there are no Federal regulations for evaluating potential health effects of fungal contamination and remediation. This information is subject to change as more information regarding fungal contaminants becomes available. For more information visit http://www.epa.gov/mold or www.nyc.gov/html/doh/html/epi/mold.shtml. This document was designed to follow currently known industry guidelines for the interpretation of microbial sampling, analysis, and remediation. Since interpretation of mold analysis reports is a scientific work in progress, it may as such be changed at any time without notice. The client is solely responsible for the use or interpretation. PRO-LAB/SSPTM Inc. makes no express or implied warranties as to health of a property from only the samples sent to their laboratory for analysis. The Client is hereby notified that due to the subjective nature of fungal analysis and the mold growth process, laboratory samples can and do change over time relative to the originally sampled material. PRO-LAB/SSPTM Inc. reserves the right to properly dispose of all samples after the testing of such samples are sufficiently completed or after a 7 day period, whichever is greater.

MICROBIOLOGY LABS ISO/IEC 17025:2017 Accredited Laboratory AIHA LAP, LLC AIHAACCREDITEDLABS.ORG Lab ID # 163230

For more information please contact PRO-LAB at (954) 384-4446 or email info@prolabinc.com

PRO-LAB®
1675 North Commerce Parkway, Weston, FL 33326 (954) 384-4446

Prepared for : A-WD MULTI SERVICES LLC

Test Address : MIGUEL ROLON
693 WALKUP DR
ORLANDO, FL 32808

ANALYSIS METHOD	6210 Surface and Bulk Direct Examination	6110 Air Direct Examination	6110 Air Direct Examination	INTENTIONALLY BLANK
LOCATION	GUEST BATHROOM	GUEST BATHROOM	OUTSIDE	
COC / LINE #	1864500 - 1	1864500 - 2	1864500 - 3	
SAMPLE TYPE	SWAB	PRO-15	PRO-15	
VOLUME	NA	150.00L	150.00L	
SERIAL NUMBER	None supplied	Q2673245	Q2673261	
COLLECTION DATE	**Jul 16, 2025**	**Jul 16, 2025**	**Jul 16, 2025**	
ANALYSIS DATE	**Jul 16, 2025**	**Jul 16, 2025**	**Jul 16, 2025**	
CONCLUSION	**UNUSUAL**	**NOT ELEVATED**	**CONTROL**	

IDENTIFICATION		Mold Present		Raw Count	Spores per m^3	Total %	Raw Count	Spores per m^3	Total %			
Cladosporium		X		12	80	60	4	27	33			
Hyphae		X					4	27	33			
Penicillium/Aspergillus		X		8	53	40	4	27	33			
TOTAL SPORES		NA		20	133	100	12	81	100			
MINIMUM DETECTION LIMIT*		NA		4	27		4	27				
BACKGROUND DEBRIS	Not Applicable			Light			Light					
Cellulose Fiber				8	53							
OBSERVATIONS & COMMENTS	Presence of growth observed.											

Background debris qualitatively estimates the amount of particles that are not pollen or spores and directly affects the accuracy of the spore counts. The categories of Light, Moderate, Heavy and Too Heavy for Accurate Count, are used to indicate the amount of deposited debris. Light (None to up to 25% obstruction); Medium (26% to up to 75% obstruction); Heavy (76% to up to 90% obstruction); Too Heavy (Greater than 90% obstruction). Increasing amounts of debris will obscure small spores and can prevent spores from impacting onto the slide. The actual number of spores present in the sample is likely higher than reported if the debris estimate is 'Heavy' or 'Too Heavy for Accurate Count'. All calculations are rounded to two significant figures and therefore, the total percentage of spore numbers may not equal 100%. The effect of the results relate only to the items tested. The methods used in this analysis have been validated and is fit for the intended use. R "version" indicated after the lab ID# indicates a sample with amended data. PRO-LAB/SSPTM Inc. does not perform any sample collection. The information is supplied by the customer and can affect the validity of results. The results apply to the sample as received.

* **Minimum Detection Limit**. Based on the volume of air sampled, this is the lowest number of spores that can be detected and is an estimate of the lowest concentration of spores that can be read in the sample.
NA = Not Applicable.

Spores that were observed from the samples submitted are listed on this report. If a spore is not listed on this report it was not observed in the samples submitted.

Interpretation Guidelines: A determination is added to the report to help users interpret the mold analysis results. A mold report is only one aspect of an indoor air quality investigation. The most important aspect of mold growth in a living space is the availability of water. Without a source of water, mold generally will not become a problem in buildings. These determinations are in no way meant to imply any health outcomes or financial decisions based solely on this report. For questions relating to medical conditions you should consult an occupational or environmental health physician or professional.

Conclusions for Air Sampling

CONTROL is a baseline sample showing what the spore count and diversity is at the time of sampling. The control sample(s) is usually collected outside of the structure being tested and used to determine if this sample(s) is similar in diversity and abundance to the inside sample(s).

ELEVATED means that the amount and/or diversity of spores, as compared to the control sample(s), and other samples in our database, are higher than expected. This can indicate that fungi have grown because of a water leak or water intrusion. Fungi that are considered to be indicators of water damage include, but are not limited to: *Chaetomium*, *Fusarium*, *Memnoniella*, *Stachybotrys*, *Scopulariopsis*, *Ulocladium*.

NOT ELEVATED means that the amount and/or the diversity of spores, as compared to the control sample and other samples in our database, are lower than expected and may indicate no problematic fungal growth.

Conclusions for Physical Sampling

UNUSUAL means that the presence of growth was observed in the analyzed sample. An abundance of spores are present, and/or growth structures including hyphae and/or fruiting bodies are present and associated with one or more of the types of mold/fungi identified in the analyzed sample.

NORMAL means that no presence of growth was observed in the analyzed sample. If spores are recorded they are normally what is in the air and have settled on the surface(s) tested.

PRO-LAB®
1675 North Commerce Parkway, Weston, FL 33326 (954) 384-4446

Chain of Custody # 1864500

Identification	Outdoor Habitat	Indoor Habitat	Possible Allergic Potential Not an opinion or interpretation	Comments
Cladosporium	The most common spore type reported in the air worldwide. Found on dead and dying plant litter, and soil.	Commonly found on wood and wallboard. Commonly grows on window sills, textiles and foods.	Type I (hay fever and asthma), Type III (hypersensitivity pneumonitis) allergies.	A very common and important allergen source both outdoors and indoors.
Hyphae	Common everywhere.	All substrates.	None known.	Hyphae are the "root-like" food absorption strands common to nearly all fungi. They sometimes can become airborne.
Penicillium/Aspergillus	Common everywhere. Normally found in the air in small amounts in outdoor air. Grows on nearly everything.	Wetted wallboard, wood, food, leather, etc. Able to grow on many substrates indoors.	Type I (hay fever and asthma) allergies and Type III (hypersensitivity pneumonitis) allergies.	This is a combination group of Penicillium and Aspergillus and is used when only the spores are seen. The spores are so similar that they cannot be reliably separated into their respective genera.

PRO-LAB®
1675 North Commerce Parkway, Weston, FL 33326 (954) 384-4446

Prepared for : A-WD MULTI SERVICES LLC

Test Address : MIGUEL ROLON
693 WALKUP DR
ORLANDO, FL 32808

Indoor Air Quality Testing

Introduction

The fungi are a large group of organisms that include mold. In nature, the fungi and mold help breakdown and recycle nutrients in the environment. Mold are the most common type of fungi that grow indoors. Mold are microscopic organisms that live on plants, in the soil, and on animals, in fact almost anywhere food and moisture are available. Mold is everywhere present in the outdoor and normal indoor environments. It is in the air and on surfaces as settled dust. Exposure to mold is inevitable in everyday life. Thus, exposure to mold is considered part of a normal activity for most people. Only environments for which extraordinary preparations have been taken don't have mold present in the air or on surfaces.

Understanding Mold

Under the right conditions (moisture, a food source, and time) mold will grow, multiply and produce spores. Mold grows throughout nature as well as the built environment. Mold reproduces by microscopic cells called "spores" that can be spread easily through the air. Mold spores are always present in the indoor and outdoor air. There are mold that can grow on any organic substrate including wood, paper, carpet, food, ceiling tiles, dried fish, carpet, or any surface where dust has accumulated. When excessive moisture or water accumulates indoors, mold growth will often occur, particularly if the moisture problem remains undiscovered or un-addressed. There is no practical way to eliminate all mold spores in the indoor environment. The way to control indoor mold growth is to control the amount of moisture available to the mold.

Mold growth can become a problem in your home or office where there is sufficient moisture and the right foodstuff is available. The key to preventing mold growth is to prevent all moisture problems. Of course, hidden mold can grow when there is water available behind walls, sinks, floors, etc. Indications of hidden moisture problems are discoloration of ceiling or walls, warped floors or condensation on the windows or walls.

Controlling Moisture

The most critical step in solving a mold problem is to accurately identify and fix the source(s) of moisture that allowed the growth to occur. In order to prevent mold from growing, it is important that water damaged areas be dried within a 24-48 hour period. If a small amount of mold is present in the home, the mold can be cleaned up with a mild detergent and the excess water or moisture removed. It is not necessary to try and kill the mold or its spores. You can carefully remove the moldy materials if necessary. There are many common sources of excess moisture that can contribute to indoor mold growth. Some of the primary means of moisture entry into homes and buildings are water leakage (such as roof or plumbing leaks), vapor migration, capillary movement, air infiltration, humidifier use, and inadequate venting of kitchen and bath humidity. The key to controlling moisture is to generally reduce indoor humidity within 35% - 60% (depending what climate you live in) and fix all leaks whatever their cause.

Mold Growth Sources

If the source of moisture is not easily detected or you have a hidden water leak, mold testing can be helpful. Often a roof leak or a plumbing leak can be identified as the source. The difficulty arises when there is an odor present or when an occupant shows signs of mold exposure but no visible mold can be seen. Excess water intrusion can also lead to dry rot of lumber and cause a serious structural defect in buildings.

Health Related Risks

Based on the Institute of Medicine and the National Academy of Sciences, dampness and mold in homes is associated with increases in several adverse health effects including cough, upper respiratory symptoms, wheeze, and exacerbation of asthma. Mold and fungi contain many known allergens and toxins that can adversely affect your health. Scientific evidence suggests that the disease of asthma may be more prevalent in damp affected buildings. Dampness and mold in homes, office buildings and schools represent a public health problem. The Institute of Medicine concluded, "When microbial contamination is found, it should be eliminated by means that not only limit the possibility of recurrence but also limit exposure of occupants and persons conducting the remediation".

Mold Sampling Methods

The goal of sampling is to learn about the levels of mold growth and amplification in buildings. There are no EPA or OSHA standards for levels of fungi and mold in indoor environments. There are also no standard collection methods. However, several generally accepted collection methods are available to inspectors to study mold (and bacteria) in indoor environments. Comparison with reference samples can be a useful approach. Reference samples are usually taken outdoors and sometimes samples can be taken from "non-complaint" areas. In general, indoor fungal concentrations should be similar to or lower than outdoor levels. High levels of mold only found inside buildings often suggest indoor amplification of the fungi. Furthermore, the detection of water-indicating fungi, even at low levels, may require further evaluation. There are several types of testing methods that can detect the presence of mold. They can be used to find mold spores that are suspended in air, in settled dust, or mold growing on surfaces of building materials and furnishings. There are different methods that can identify types of live mold and dead mold in a sampled environment. Mold spores can be allergenic and toxic even when dead.

All sampled material obtained in the laboratory is analyzed using modern microscopic methods, standard and innovative mycological techniques, analyzed at 630 – 1,000 times magnification.

Testing for mold with an accredited laboratory is the best way to determine if you have mold and what type of mold it is.

Sampling Methods

Surface sampling can be useful for differentiating between mold growth and stains of various kinds. This type of sampling is used to identify the type of mold growth that may be present and help investigate water intrusion. Surface sampling can help the interpretation of building inspections when used correctly. The following are the different types of surface samples that are commonly used to perform a direct examination of a specific location. Spore counts per area are not normally useful.

Tape (or tape-lift)

These samples are collected using clear adhesive tape or adhesive slide for microscopic examination of suspect stains, settled dust and spores. Tape lifts are an excellent, non-destructive method of sampling. The laboratory is usually able to determine if the there is current of former mold growth or if only normally settled spores were sampled.

Bulk

This is a destructive test of materials (e.g., settled dust, sections of wallboard, pieces of duct lining, carpet segments, return-air filters, etc.) to determine if they contain or show mold growth. Bulk sampling collects a portion of material small enough to be transported conveniently and handled easily in the laboratory while still representing the material being sampled. A representative sample is taken from the bulk sample and can be cultured for species identification or analyzed using direct microscopy for genus identification. The laboratory is usually able to determine if the there is current of former mold growth or if only normally settled spores were sampled.

Swab

A sterile cotton or synthetic fiber-tipped swab is used to test an area of suspected mold growth. Samples obtained using this method can be cultured for species identification or analyzed using direct microscopy for genus identification. The laboratory is usually able to determine if there is current of former mold growth or if only normally settled spores were sampled. Identified spores are generally reported as "present/absent".

Carpet (filter-type) Cassette

A carpet cassette is used with a portable air pump (flow rate usually doesn't matter) to collect mold, pollen and other particulates. Samples obtained using this method can be cultured for species identification or analyzed using direct microscopy for genus identification. This method is usually used to determine a presence or absence of water-indicating mold in a carpet. The laboratory is usually able to determine if the there is current of former mold growth or if only normally settled spores were sampled.

Air Cassette

Air samples are possibly the most common type of environmental sample that investigators collect to study bioaerosols (mold, pollen, particulates). The physics of removing particles from the air and the general principles of good sample collection apply to all airborne materials, whether biological or other origin. Therefore, many of the basic principles investigators use to identify and quantify other airborne particulate matter can be adapted to bioaerosol sampling. Common to all aerosol samplers is consideration of collection efficiency. The following are the two most common forms of air sampling methods.

Data Interpretation

Information (data) on mold in buildings can consist of the simple observation of fungal growth on a wall, analytical measurements from hundreds of environmental samples, or the results of a survey of building occupants with and without particular building-related conditions. Data interpretation is the process whereby investigators make decisions on (a) the relevance to human exposure of environmental observations and measurements, (b) the strength of associations between exposure and health status, and (c) the probability of current or future risks. These interpretation steps are followed by decisions on what measures can be taken to interrupt exposure and prevent future problems.

Remediation of Mold

Prevention of mold growth indoors is only possible if the factors that allow it to grow are identified and controlled. When prevention has failed and visible growth has occurred in a home or building, remediation and/or restoration may be required. The extent of the mold growth will determine the scope of the remediation required. The goal of remediation is to remove or clean mold-damaged material using work practices that protect occupants by controlling the dispersion of mold from the work area and protect the workers from exposure to mold. You should consult a professional when contemplating fixing a large area of mold growth. Generally, remediation requires (a) removal of porous materials showing extensive microbial growth, (b) physical removal of surface microbial growth on non-porous materials to typical background levels, and (c) reduction of moisture to levels that do not support microbial growth. Identification of the conditions that contributed to microbial proliferation in a home or building is the most important step in remediation. No effective control strategy can be implemented without a clear understanding of the events or building dynamics responsible for microbial growth. Following the completion of the remediation process, mold testing should be performed to obtain clearance.

Symptoms of Mold Exposure

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 specialists who are trained in occupational/environmental medicine or related specialties and are knowledgeable about these types of exposures. Decisions about removing individuals from an affected area must be based on the results of such medical evaluation. Mold is naturally present in outdoor environments and we share the same air between the indoor and outdoor, it is impossible to eliminate all mold spores indoors.

Ten Things You Should Know About Mold

1) Potential health effects and symptoms associated with mold exposures include allergic reactions, asthma, and other respiratory problems.
2) There is no practical way to completely eliminate 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 building, you must clean up the mold and eliminate sources of moisture.
4) To prevent mold growth any source of a water problem or leak must be repaired.
5) Indoor humidity must be reduced (generally below 60%) to reduce the chances of mold growth by: adequately venting bathrooms, dryers, and other moisture-generating sources to the outside; using air conditioners and de-humidifiers; 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 of hard surfaces with water and detergent and dry completely.
8) Prevent condensation: reduce the potential for condensation on cold surfaces (e.g., windows, piping, exterior walls, roof, or floors) by adding insulation.
9) In areas where there is a perpetual moisture problem on the floor, do not install carpeting
10) Mold can be found almost anywhere. Mold can grow on wood, paper, carpet, foods; almost anything can support some mold growth provided there is moisture, time to grow and food to eat.

References & Resources

Bioaerosols: Assessment and Control, Janet Macher, Sc.D., M.P.H., Editor. 1999. ACGIH, 1330 Kemper Meadow Drive, Cincinnati, OH 45240-1634.

Health Implications of Fungi in Indoor Environments, Edited by R.A. Samson. 1994. Elsevier Science, P.O. Box 945, Madison Square Station, New York, NY 10159-0945.

Damp Indoor Spaces and Health, Institute of Medicine of the National Academies, Washington, DC, 2004

Field Guide for the Determination of Biological Contaminants in Environmental Samples, 2nd Edition, Edited by L-L. Hung, et al. AIHA, Fairfax, VA, 2005.

Recognition, Evaluation, and Control of Indoor Mold, Edited by B. Prezant, et al. AIHA, Fairfax, VA, 2008.

Useful Websites

www.acgih.org/resources/links.htm
American Conference of Governmental Industrial Hygienists - information on Indoor Air Quality and useful links

www.cal-iaq.org
California Indoor Air Quality Program - California Indoor Air Quality resources and useful links

www.health.state.ny.us/environmental/indoors/air/mold.htm
New York State Department of Health - New York state recommendations for IAQ, indoor mold inspections, remediation, and prevention

http://www.nyc.gov/html/doh/html/epi/moldrpt1.shtml
Guidelines for Assessment and Remediation of Fungi in Indoor Environments – a good reference for mold clean up and removal

orf.od.nih.gov/PoliciesAndGuidelines/ORFPolicies/MoldPrevPolicy.htm
National Institutes of Health - information mold prevention and remediation

http://www.niehs.nih.gov/health/topics/agents/mold/index.cfm
National Institute of Environmental Health Sciences - information on mold

www.epa.gov/mold/
United States Environmental Protection Agency website on mold and moisture

www.aaaai.org/nab/index.cfm?p=faq
American Academy of Allergy, Asthma, and Immunology – information on mold and allergies and outdoor allergens

http://www.aanma.org/?s=mold
Allergy & Asthma Network – information for homes about allergies and asthma

http://www.homeenergyresourcemn.org
Minnesota Department of Commerce Energy Information Center – good information on moisture control in homes

http://eetd.lbl.gov/ie/
Governmental Indoor Environment Department – good information on indoor health, comfort and energy efficiency in buildings

http://www.osha.gov/dts/shib/shib101003.html
Occupational US Department of Labor (OSHA) - A Brief Guide to Mold in the Workplace