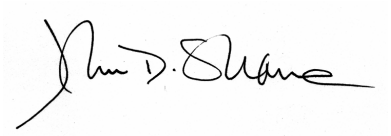
PRO-LAB®
1675 North Commerce Parkway, Weston, FL 33326 (954) 384-4446

YOUR GREAT COMPANY
1234 ANY STREET
CHICAGO, IL 60616

Certificate of Analysis

Prepared for:	YOUR GREAT COMPANY
Phone Number:	(888) 765-4321
Fax Number:	(888) 123-4567
Email Address:	your_email@email.com
Project Name:	HOME OWNER
Test Location:	12346 THIS STREET PEORIA, IL 55555
Chain of Custody #:	320441
Received Date:	June 17, 2009
Report Date:	June 17, 2009



John D. Shane Ph.D., QA Manager

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.

AIHA LAP, LLC
ACCREDITED LABORATORY
ENVIRONMENTAL MICROBIOLOGY
ISO/IEC 17025:2005
WWW.AIHAACCREDITEDLABS.ORG
LAB # 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 : YOUR GREAT COMPANY

Test Address : HOME OWNER
12346 THIS STREET
PEORIA, IL 55555

ANALYSIS METHOD	Spore trap analysis			Spore trap analysis			Spore trap analysis			Spore trap analysis		
LOCATION	Bedroom			Den			Play Room			Outside Control		
COC / LINE #	320441-1			320441-2			320441-3			320441-4		
SAMPLE TYPE & VOLUME	AIR-O-CELL - 75L			AIR-O-CELL - 75L			AIR-O-CELL - 75L			AIR-O-CELL - 75L		
SERIAL NUMBER	123451			123452			123453			123454		
COLLECTION DATE	**Jun 10, 2009**			**Jun 10, 2009**			**Jun 10, 2009**			**Jun 10, 2009**		
ANALYSIS DATE	**Jun 17, 2009**			**Jun 17, 2009**			**Jun 17, 2009**			**Jun 17, 2009**		
RESULT	**NOT ELEVATED**			**NOT ELEVATED**			**ELEVATED**			**CONTROL**		
IDENTIFICATION	Raw Count	Spores per m^3	Percent of Total	Raw Count	Spores per m^3	Percent of Total	Raw Count	Spores per m^3	Percent of Total	Raw Count	Spores per m^3	Percent of Total
Alternaria	8	107	3	4	53	2	20	267	10	28	373	3
Beltrania										8	107	1
Bipolaris/Drechslera	12	160	5	4	53	2	4	53	2	12	160	1
Cercospora										36	480	4
Chaetomium							40	533	21			
Cladosporium	16	213	6	32	427	17	24	320	13	216	2,880	25
Curvularia										4	53	<1
Epicoccum	12	160	5	8	107	4				24	320	3
Other Ascospores	64	853	25	48	640	26	16	213	8	176	2,347	21
Other Basidiospores	100	1,333	39	48	640	26	20	267	10	268	3,573	32
Penicillium/Aspergillus	20	267	8	28	373	15	12	160	6	12	160	1
Pithomyces	4	53	2									
Rusts	4	53	2	4	53	2				16	213	2
Smuts, myxomycetes	16	213	6	8	107	4	12	160	6	48	640	6
Stachybotrys							44	587	23			
TOTAL SPORES	256	3,412	100	184	2,453	100	192	2,560	100	848	11,306	100
Minimum detection limit:		53			53			53			53	
BACKGROUND DEBRIS	Light			Moderate			Moderate			Light		
Cellulose Fiber	24	320		20	267		48	640		4	53	
Fiberglass	8	107		8	107		4	53				
Insect Fragments				4	53		4	53		12	160	
Plant Fragments	4	53										
Pollen	16	213		12	160		8	107		48	640	
OBSERVATIONS & COMMENTS												

Background debris 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. Increasing amounts of debris will obscure small spores and can prevent spores from impacting onto the slide. Spore counts that are included with Heavy or Too Heavy for Accurate Count are minimal counts and the actual numbers of spores are likely much higher. Total percent may not equal 100% due to rounding.

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

Prepared for : YOUR GREAT COMPANY

Test Address : HOME OWNER
12346 THIS STREET
PEORIA, IL 55555

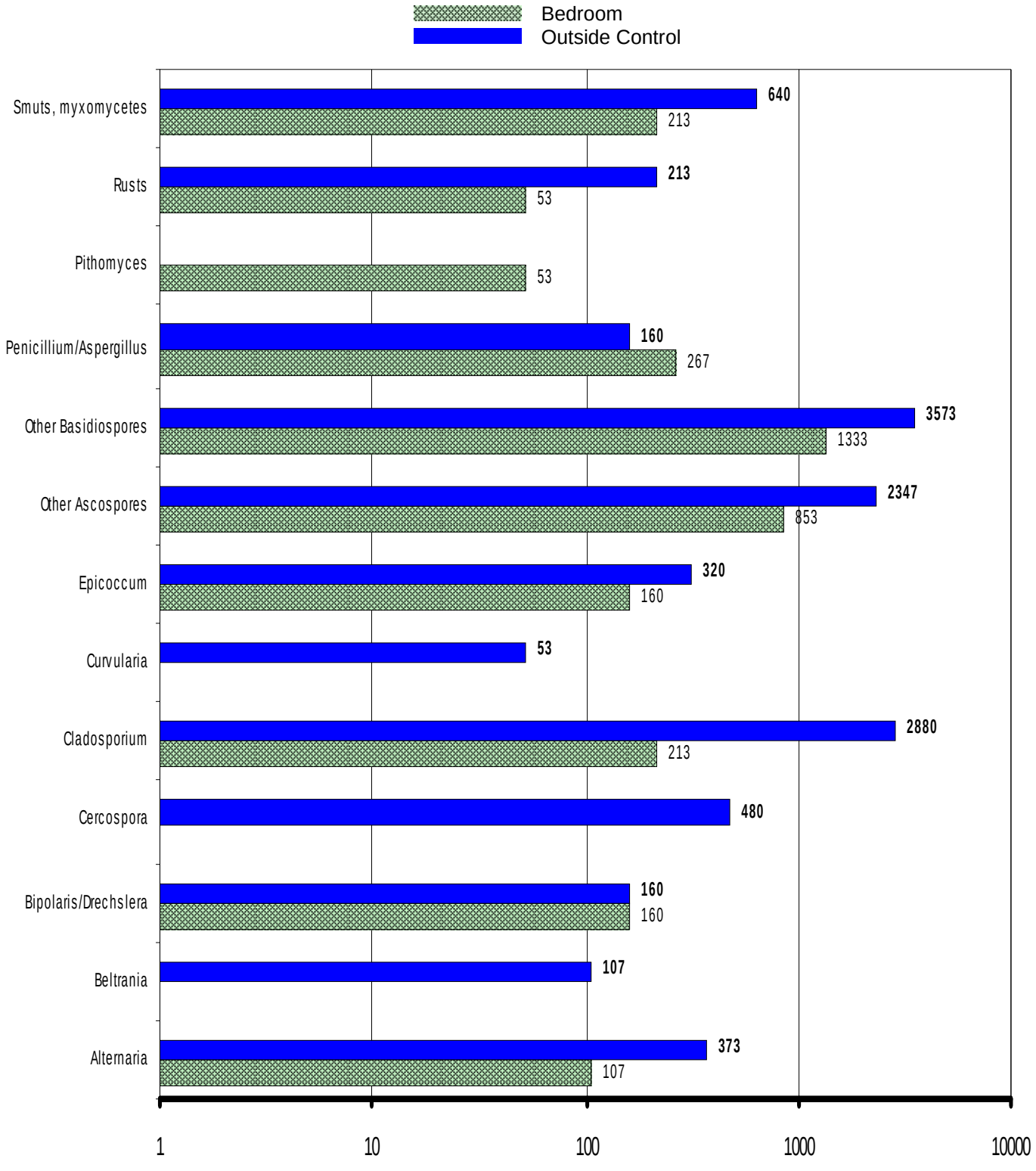
ANALYSIS METHOD	Spore trap analysis	Spore trap analysis	Spore trap analysis	BLANK
LOCATION	Kitchen	Upstairs Office	Upstairs Bathroom	
COC / LINE #	320441-5	320441-6	320441-7	
SAMPLE TYPE & VOLUME	AIR-O-CELL - 75L	AIR-O-CELL - 75L	AIR-O-CELL - 75L	
SERIAL NUMBER	123455	123456	123457	
COLLECTION DATE	**Jun 10, 2009**	**Jun 10, 2009**	**Jun 10, 2009**	
ANALYSIS DATE	**Jun 17, 2009**	**Jun 17, 2009**	**Jun 17, 2009**	
RESULT	**NOT ELEVATED**	**NOT ELEVATED**	**NOT ELEVATED**	

IDENTIFICATION	Raw Count	Spores per m^3	Percent of Total	Raw Count	Spores per m^3	Percent of Total	Raw Count	Spores per m^3	Percent of Total	Raw Count	Spores per m^3	Percent of Total
Alternaria	8	107	5	4	53	3	8	107	6			
Beltrania												
Bipolaris/Drechslera												
Cercospora												
Chaetomium												
Cladosporium	36	480	23	48	640	31	32	427	24			
Curvularia												
Epicoccum	12	160	8	12	160	8	4	53	3			
Other Ascospores	28	373	18	36	480	23	32	427	24			
Other Basidiospores	20	267	13	28	373	18	28	373	21			
Penicillium/Aspergillus	28	373	18	12	160	8	20	267	15			
Pithomyces												
Rusts	8	107	5	4	53	3						
Smuts, myxomycetes	16	213	10	12	160	8	8	107	6			
Stachybotrys												
TOTAL SPORES	156	2,080	100	156	2,079	100	132	1,761	100			
Minimum detection limit:		53			53			53				
BACKGROUND DEBRIS	Moderate			Moderate			Light					
Cellulose Fiber	8	107		12	160		4	53				
Fiberglass				8	107		4	53				
Insect Fragments	8	107										
Plant Fragments				4	53		4	53				
Pollen	4	53		4	53							
OBSERVATIONS & COMMENTS												

Background debris 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. Increasing amounts of debris will obscure small spores and can prevent spores from impacting onto the slide. Spore counts that are included with Heavy or Too Heavy for Accurate Count are minimal counts and the actual numbers of spores are likely much higher. Total percent may not equal 100% due to rounding.

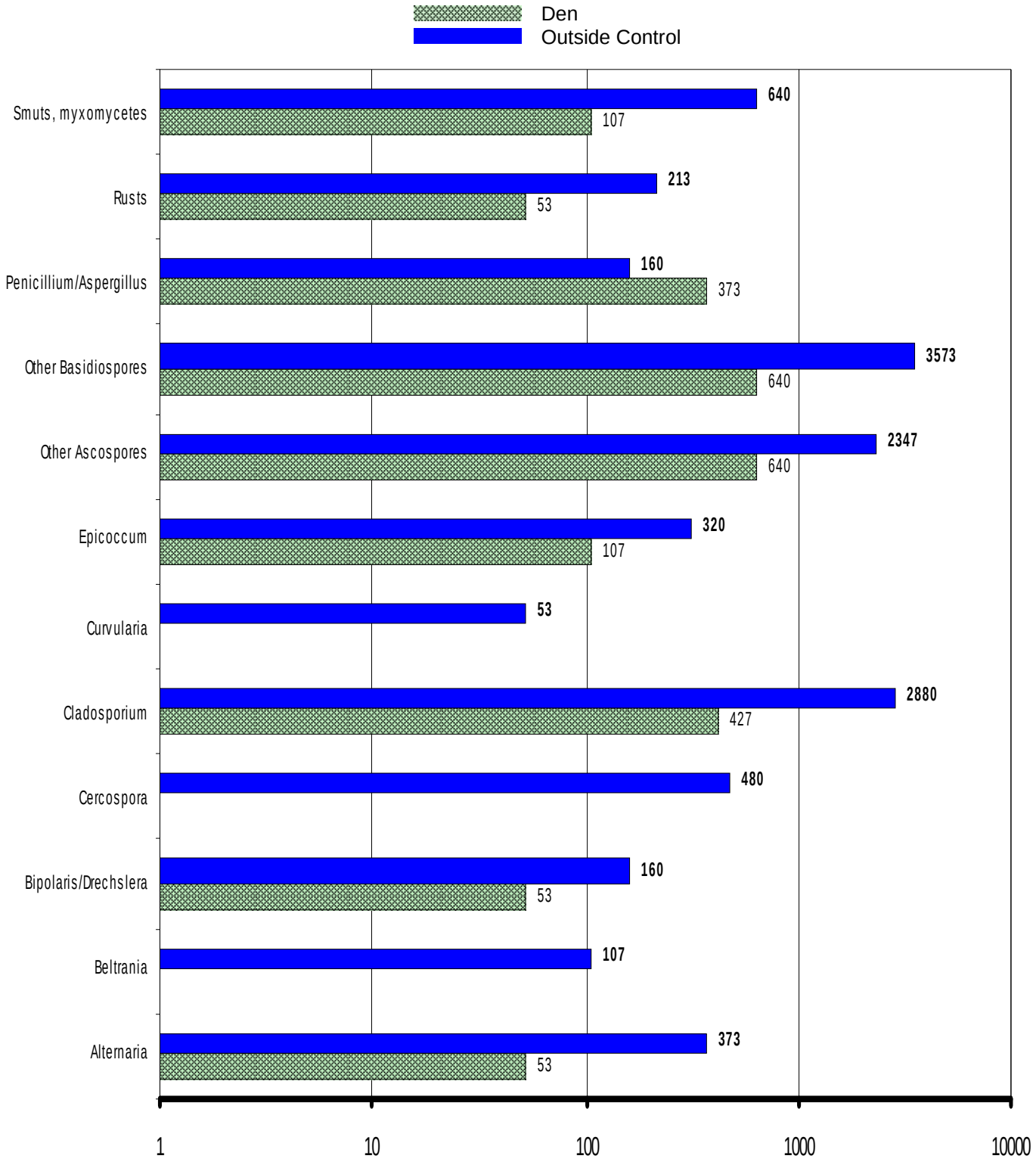
PRO-LAB®
1675 North Commerce Parkway, Weston, FL 33326 (954) 384-4446

Chain of Custody # 320441



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

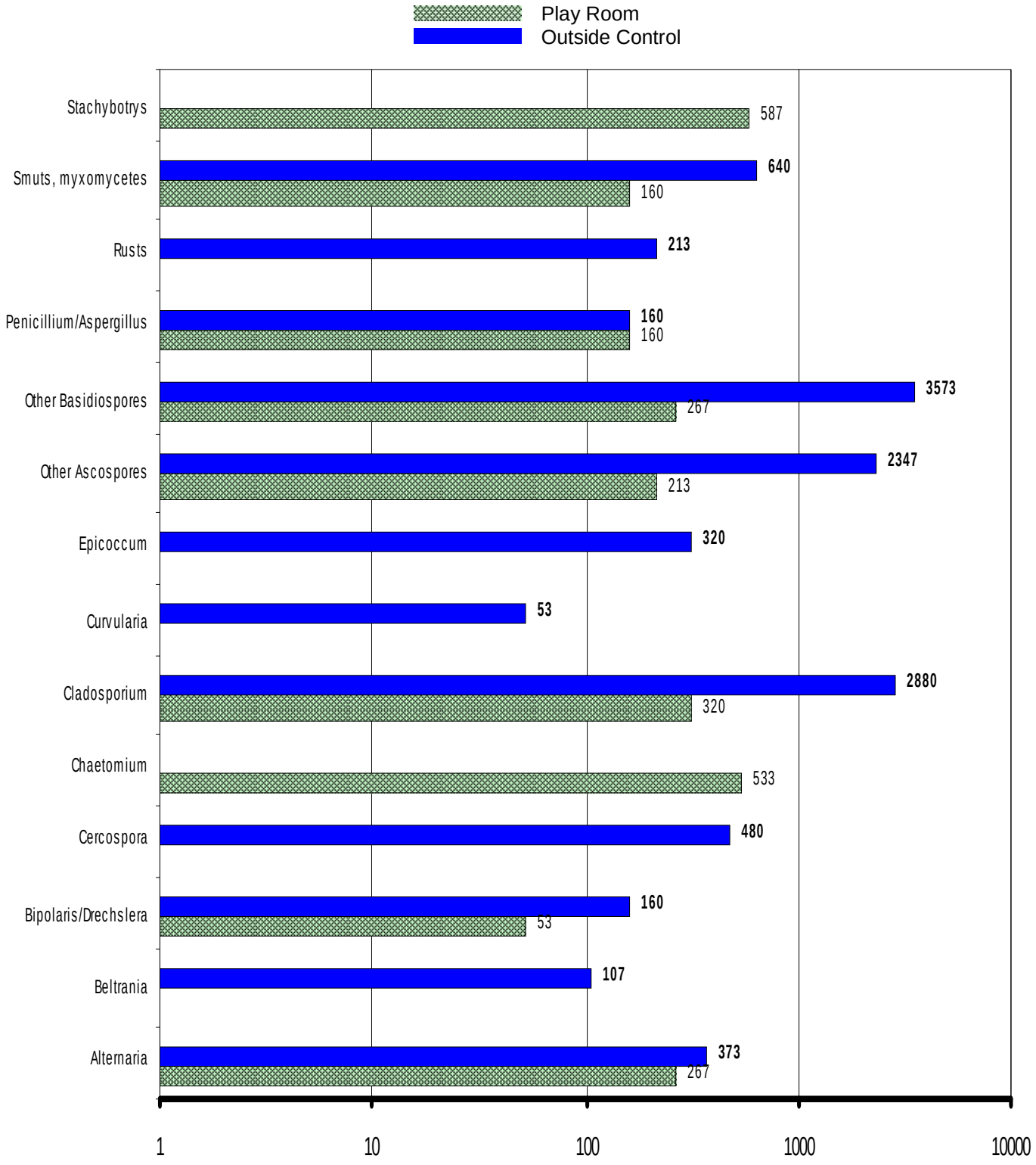
Chain of Custody # 320441



Spores per cubic meter

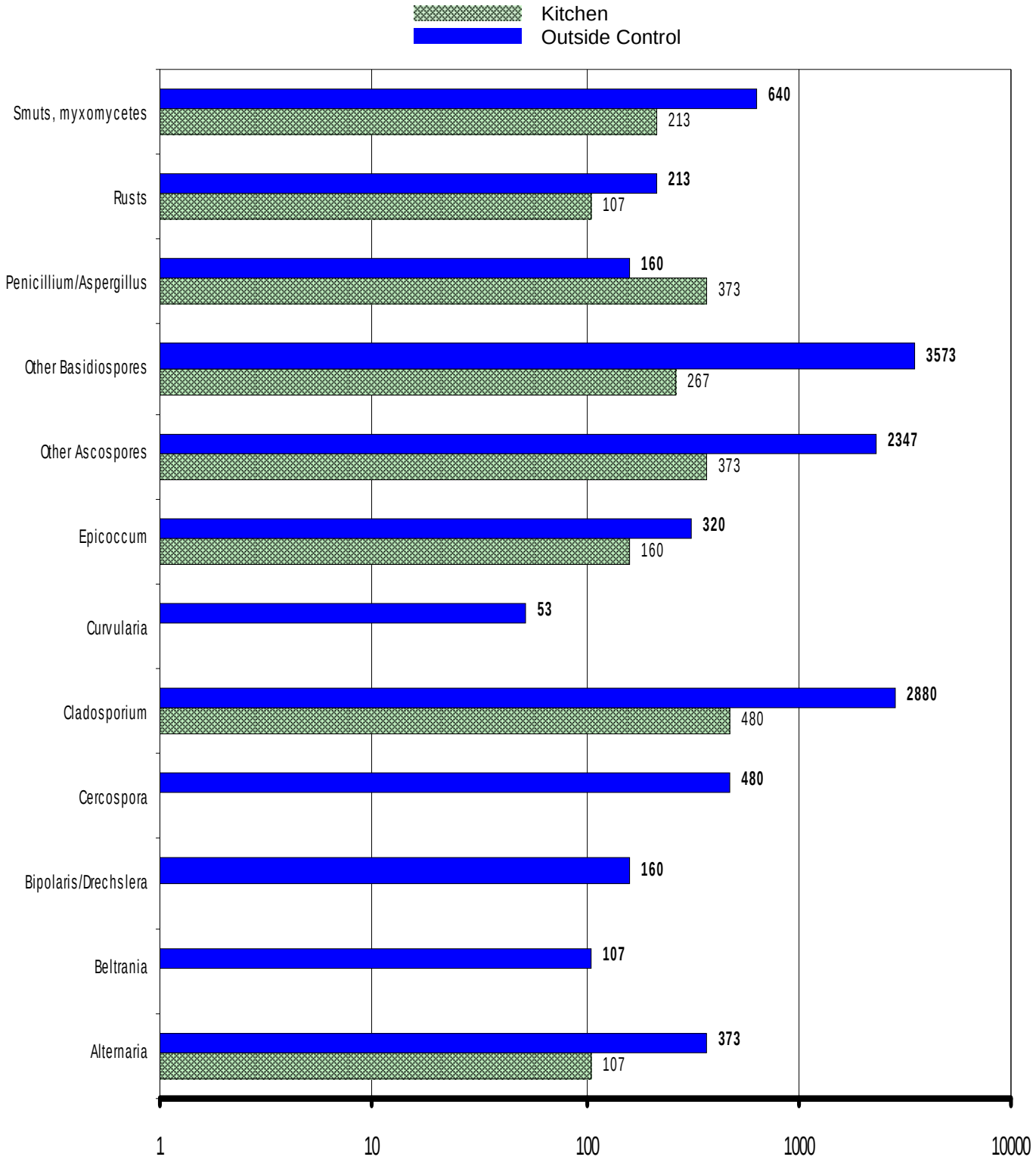
PRO-LAB®
1675 North Commerce Parkway, Weston, FL 33326 (954) 384-4446

Chain of Custody # 320441



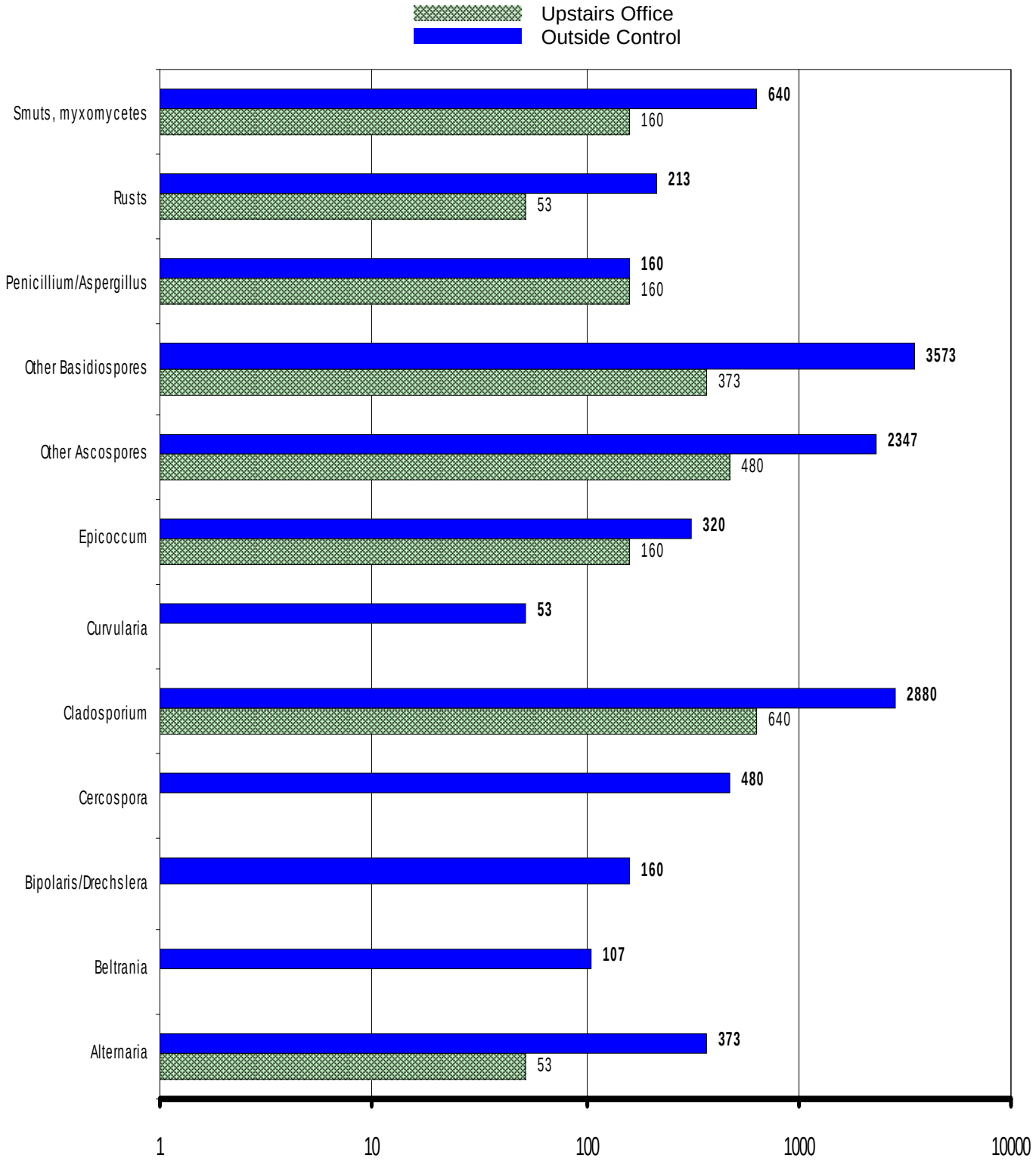
PRO-LAB®
1675 North Commerce Parkway, Weston, FL 33326 (954) 384-4446

Chain of Custody # 320441



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

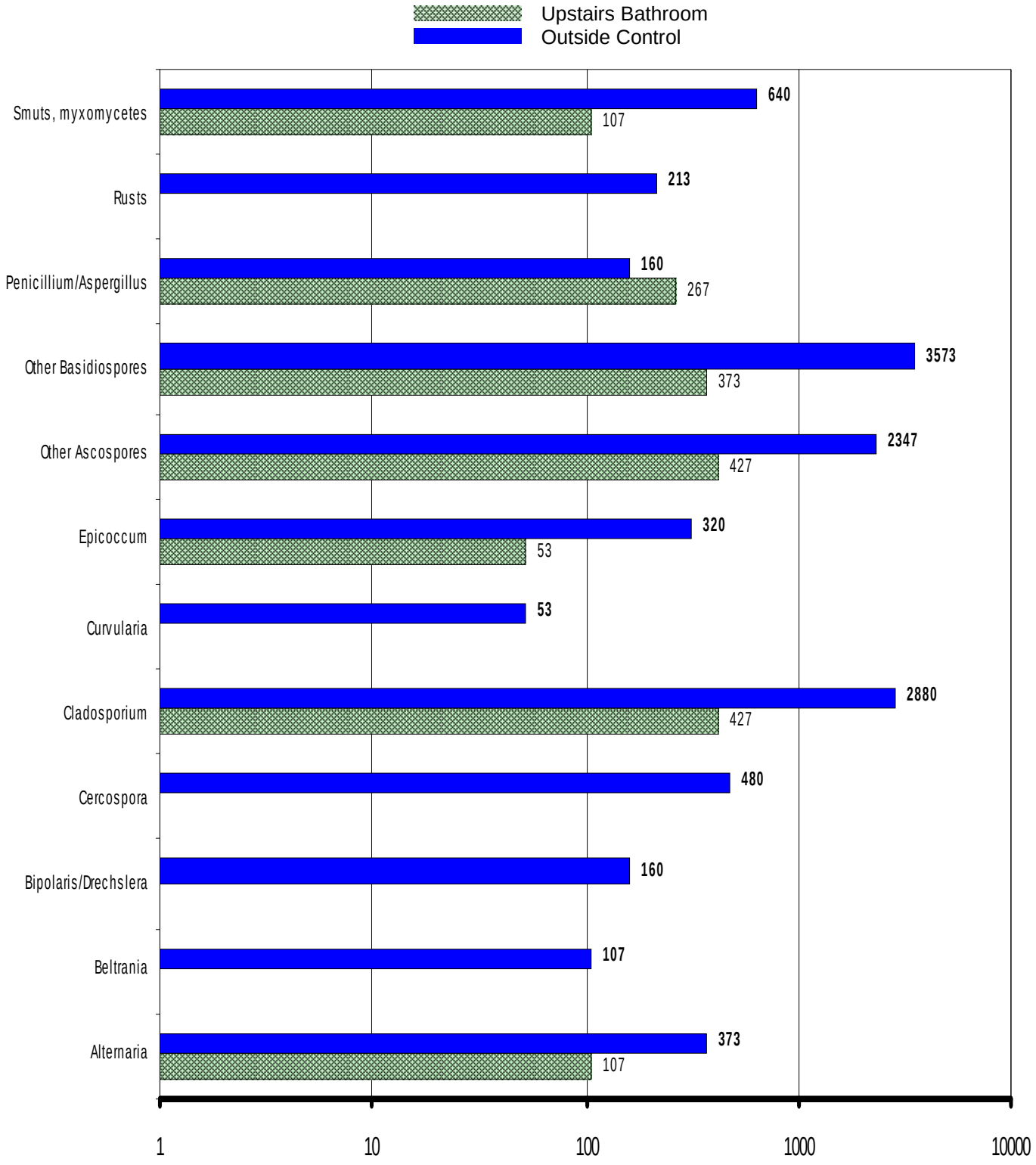
Chain of Custody # 320441



Spores per cubic meter

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

Chain of Custody # 320441



Identification	Outdoor Habitat	Indoor Habitat	Allergic Potential	Pathogenicity	Toxins Produced	Comments
Alternaria	One of the most commonly reported airborne spores worldwide; Soil, dead or dying plants, foodstuffs, textiles	Wallboard paper backing, wood, other various cellulose-containing materials. Common in settled dust on carpets, drapes, textiles, etc.	Common allergen. Type I allergies (hay fever and asthma); Type III hypersensitivty pneumonitis. Common cause of extrinsic asthma.	Alternaria species are emerging as pathogens in immunocompromised persons.	Dextruxin B, alternariols, altenuenes, altertoxins, tenuazonic acid	Alternaria is commonly found in elevated numbers on wet-intruded building materials and in higher spore numbers in the air with respect to the outside when growth on wet building materials occurs.
Beltrania	Grows on dead oak tree leaves and plant material and soil, mostly semi-tropical or mediterranean habitats.	Not known to grow indoors	None known.	Not known.	None known.	
Bipolaris/Drechslera	Common everywhere. Frequently associated with grasses, but also found on plant material, decaying food, and soil.		Common Type I (hay fever and asthma), fungal sinusitis.	Has been reported as an infrequent agent of phaeohyphomycosis, and keratitis. Mostly affecting immunocompromised persons.	None known.	This is a group of like-looking spores that include Bipolaris, Drechslera, Exserohilum, and sometimes Helminosporium. They cannot be consistently separated by spore morphology and are thus grouped together. Must be cultured to consistly separate the genera.
Cercospora	Common everywhere, especially growing on leaves.	Not known to grow indoors.	None known.	None known.	None known.	
Chaetomium	Common everywhere growing on dung, dead leaves, wood.	Cellulose substrates, especially wallboard and wood.	Type I (hay fever and asthma) allergies.	Uncommonly seen infecting humans, but some cases have been reported mostly on immunocompromised persons.	Produces chaetoglobosins, and rarely sterigomatocystin.	
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.	Human infection reported to be keratitis, and skin lesions. Other forms of infection rarely reported.	Cladosporin, emodin.	A very common and important allergen source both outdoors and indoors.

Identification	Outdoor Habitat	Indoor Habitat	Allergic Potential	Pathogenicity	Toxins Produced	Comments
Curvularia	Commonly found everywhere on soil and plant debris.	Capable of growing on many cellulytic substrates like wallboard and wood.	Type I (hay fever and asthma) and common cause of allergenic sinusitis.	Mostly a problem in immunocompromised persons, and a common cause of sinusitis, but has been reported to cause mycetoma, onychomycosis and peritonitis.	None known.	
Epicoccum	Commonly found everywhere. Grows on plant debris, insects and soil.	Capable of growing on several different substrates, notably wallboard and paper.	Type I (hay fever and asthma) allergies.	None known.	Epicoraxine A&B, flavipin.	Very common in the summer, especially in the midwest and during harvest time.
Ascospores	Common everywhere. Constitutes a large part of the airspora outside. Can reach very high numbers in the air outside during the spring and summer. Can increase in numbers during and after rainfalls.	Very few of this group grow inside. The notable exception is Chaetomium and Ascotricha.	Little known for most of this group of fungi. Dependent on the type (see Chaetomium and Ascotricha).	Not known	None known for most of the group (see Chaetomium)	
Basidiospores	Commonly found everywhere, especially in the late summer and fall.	Not normally found growing indoors. Can grow on wet lumber, especially in crawlspaces.	Some allergenicity reported. Type I (hay fever, asthma) and Type III (hypersensitivity pneumonitis).	Not known.	None known.	Among this group are dry rot fungi Serpula and Poria that are particularly destructive to buildings.
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) and Type III (hypersensitivity pneumonitis) allergies.	Disease potential is dependant upon which species of Penicillium or Aspergillus is present.	Toxin potential is dependant upon which species of Penicillium or Aspergillus is present.	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.
Pithomyces	Commonly seen everywhere growing dead leaves, soil and grasses.	Not normally found growing indoors, sometimes on wallboard.	None known.	None known.	Sporidesmin.	
Rusts	Common everywhere growing on grasses, trees and other living plants.	Does not grow indoors.	Type I (hay fever and asthma) allergies.	None known.	None known.	Rust requires a living plant host to complete part of its lifecycle and thus, is not normally found growing indoors except perhaps on an infected house plant.

Identification	Outdoor Habitat	Indoor Habitat	Allergic Potential	Pathogenicity	Toxins Produced	Comments
Smuts, myxomycetes	Commonly found everywhere, espcially on logs, grasses and weeds.	Smuts don`t normally grow indoors, but can occasionally be found on things brought from outside and stored in the house. Myxomycetes can occasionally grow indoors, but need lots of water to be established.	Type I (hay fever and asthma) allergies.	None known.	None known.	Smuts and myxomycetes are a combined goup of organisms because their spores look so similar and cannot be reliably distinquished from each other.
Stachybotrys	Common everywhere growing on soil and decaying plant material.	Wallboards and other paper products that are wetted. Needs high water content of substrate to grow.	Type I (hay fever and asthma) allergies.	None known.	Macrocyclic trichothecenes, stachybotryolacton, cyclosporins, sporidesmin G, satratoxin F, G & H, verrucarin J, roridin. Human toxicosis has been reported and described as burning, itching eyes, throat, and nasal passages.	Wet spored mold that generally must be dried out and disturbed before spores can get into the air.

Prepared for : YOUR GREAT COMPANY

Test Address : HOME OWNER
12346 THIS STREET
PEORIA, IL 55555

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, organic food, and time) mold will grow, multiply and produce spores. Mold grows throughout the natural as well as the built environment. Mold reproduce by microscopic cells called "spores" that are spread easily through the air. Mold spores are present through the indoor and outdoor air continually. There are mold that can grow on 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 and their 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 period. If mold is a problem in the home, the mold must 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. 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.

Surface 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 the 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 Sampling Methods

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.

"Non-Viable Methods" *(The Laboratory results are reported in "spores per cubic meter (sp/m3)*

Z5 Cassette

The Z^5 spore trap is used with a portable air pump (5 liters/minute for 1 to 5 minutes) to rapidly collect airborne aerosols including mold, pollen and other airborne particulates. Air is drawn through a small slit at the top of the cassette and spores are trapped on a sticky surface on a small glass slide inside the cassette. They are efficient at collecting spores as small as 1µm.

Micro5 Cassette

The Micro5 Microcell spore trap cassette is used with a portable air pump (5 liters/minute for 1 to 5 minutes) to collect airborne aerosols including mold, pollen and other airborne particulates. Air is drawn through a small circular hole at the top of the cassette and spores are trapped on a sticky coated glass slide inside the cassette. They are efficient at collecting spores as small as 0.8µm.

Air-O-Cell Cassette

The Air-O-Cell spore trap cassette is used with a portable air pump (15 liters/minute for 1 to 10 minutes) to collect airborne aerosols including mold, pollen and other airborne particulates. Air is drawn through a small opening at the top of the cassette and spores are trapped on a sticky coated glass slide inside the cassette. These cassettes are efficient at collecting spores as small as 2.6µm.

Allergenco-D Cassette

The Allergenco-D spore trap cassette is used with a portable air pump (15 liters/minute for 1 to 10 minutes) to collect airborne aerosols including mold, pollen and other airborne particulates. Air is drawn through a small opening at the top of the cassette and spores are trapped on a sticky coated glass slide inside the cassette. These cassettes are efficient at collecting spores as small as 1.7µm.

"Viable Methods" *(The Laboratory results are reported in "colony forming units per cubic meter (CFU/m3)*

Agar Impaction Plates

The agar impaction plates are used with a portable air pump (28.3 liters/minute for 1 to 3 minutes) to collect airborne mold. This is called "viable sampling" because it only grows what is alive at the time of testing. Air is drawn through a 200-400 holes at the top of the impactor and spores are trapped in the agar media. The agar plate should be shipped to the laboratory immediately or kept cool until it can be shipped. These cassettes are 90% efficient at collecting spores as small as 0.7µm. The laboratory results are reported in "colony forming units per cubic meter (CFU/m^3)".

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