HEALTHY HOMES INC
THE BEST NATURE HAS TO OFFER

PERFORMANCE IN THE FIELD

CASE STUDY

September 2024
Elgin, Illinois

OVERVIEW

Over time, wear and tear can significantly impact buildings, making them more susceptible to mold issues without proper maintenance. This old farmhouse attic was one of the most extreme cases our service providers have ever seen. The extrapolated Aspergillus / Penicillium mold spore levels exceeded the software's upper limit of 18,500,000. (Note: This is why the Aspergillus / Penicillium and total spore counts are identical.) Additionally, non-mold particulates were so high they likely suppressed true counts.

Surface cleaning with our powerful hydrogen peroxide solution, RE-Hydro, followed by fogging with our probiotic solution, DE-Mold, brought Aspergillus / Penicillium counts down to undetectable levels. Cladosporium levels were reduced by at least 50% after just one treatment. Given the limitations mentioned earlier, it's likely that the initial Cladosporium counts were even higher during the pre-test.

SOLUTIONS USED

- **DE-MOLD** Probiotic biological fog
- **RE-HYDRO** Hydrogen Peroxide heavy duty surface cleaner

1 Day to complete work

2 Technicians performing work

2 Solutions used for remediation

RESULTS

Organism	Pre Counts	Post Counts	Reduction
Aspergillus / Penicillium	18,500,000	None Detected	100%
Cladosporium	1,760	853	51.5%
Total Spore	18,500,00	1,600	100%

3 - Laboratory Results

Location: Attic

Sample # [redacted]
Medium Type: Air-O-Cell
Serial # 0210
Exposure: 15.00 l/min. for 5.00 min.
Total Volume: 75.00 liters
Reporting Limit: 53 Spores/cu. m

NOTE: Background material severely interfered with analysis. Spore levels and types may be underestimates. Estimated raw count on Pen/Asp group.

Sample Identification	Raw Count	Spores/cu. m	Percent(%)
- Fungi -			
Pen/Asp group	347,000	18,500,000	99.99%
Cladosporium	33	1,760	0.01%
Ascospores	3	160	0.00%
Basidiospores	3	160	0.00%
Smuts/Periconia/Myxomycetes	2	107	0.00%
Chaetomium	1	53	0.00%
Epicoccum nigrum	1	53	0.00%
Mitospores	1	53	0.00%
Total Fungi	347,044	18,500,000	100.00%
- Other -			
Hyphal Fragment	10	533	100.00%

Background Item	Level
Dust / Debris	Very High
Hyphal Fragments	Low
Opaque Particles	Very High

Location: Attic

Sample # [redacted]
Medium Type: Swab - Direct Exam
Serial # Swab

Sample Identification	Prevalence
- Fungi -	
Pen/Asp group	Present on 5 - 25% of sample area.
Cladosporium	Present on less than 5% of sample area.

Background Item	Level
Dust / Debris	Very Low
Hyphal Fragments	Low
Opaque Particles	Very Low

Laboratory Conclusion: Possible fungal growth at this site.

Analytic Methods and Formulas:

Calculated results may include one more significant figure than is mathematically justified in order to accommodate the client's needs.

IMS Analytical Method: 2.6.1 (method for analyzing abundant organisms tape lift).

IMS Laboratory Analytical Method: 2.2 (method for analyzing spore trap). Counting and identification performed at 600X magnification.

Spores per cubic meter is determined by: Total Spore Count x 4000 / (sampling rate x sampling time).

Note that this report may use mold-specific units of measure, such as Spores/cu. m and CFU/cu. m, for Sample Identifications which are not mold. Examples include pollen, fabric and fiberglass fibers, insect particles, and ash. In this context, "CFU" and "Spore" refer to individual pieces of the identified material. For Background Items, the Levels are defined thus: "Very Low" is present on less than 5% of sample area; "Low" is present on 6%-25% of sample area; "Medium" is present on 26%-50% of sample area; "High" is present on 51%-75% of sample area; "Very High" is present on 76%-100% of sample area.

[redacted]

IMS Laboratory

Report Prepared For: [redacted]
Project Name:
Report Date: 07/02/2024
Lab Number: [redacted]

IMS Laboratory, LLC is accredited through the AIHA LAP and participates in Environmental Microbiology Proficiency Testing, EMPAT #172958. Data is provided in compliance with AIHA LAP policy modules and ISO/IEC 17025:2017 guidelines.

Accredited Laboratory AIHA LAP LLC Lab ID # 172958

Kathryn C. Langley 07/02/2024

Kathryn C. Langley, Laboratory Manager

[redacted]

4 - Spore Trap Comparison Chart

SAMPLING LOCATIONS

1: Attic

Spores per Cubic Meter

Mold Name \ Location #	1
Alternaria	
Arthrinium	
Ascospores	160
Basidiospores	160
Bipolaris / Drechslera group	
Chaetomium	53
Cladosporium	1,760
Curvularia	
Epicoccum nigrum	53
Erysiphe/Oidium	
Fusarium	
Ganoderma	
Mitospores	53
Pen/Asp group	18,500,000
Pithomyces	
Polythrincium	
Rust	
Smuts/Periconia/Myxomycetes	107
Stachybotrys	
Stemphylium	
Torula	
Unknown Fungi	
FUNGAL TOTAL	**18,500,000**
Hyphal Fragment	533
Pollen	

Please refer to the Laboratory Results section for additional details.

3 - Laboratory Results

Location: Attic

Sample # [redacted]
Medium Type: Air-O-Cell
Serial # 5929
Exposure: 15.00 l/min. for 5.00 min.
Total Volume: 75.00 liters
Reporting Limit: 53 Spores/cu. m

Sample Identification	Raw Count	Spores/cu. m	Percent(%)
- Fungi -			
Cladosporium	16	853	53.38%
Basidiospores	7	373	23.34%
Ascospores	4	213	13.33%
Ganoderma	1	53	3.32%
Mitospores	1	53	3.32%
Rust	1	53	3.32%
Total Fungi	30	1,600	100.00%
- Other -			
Pollen	4	213	100.00%

Background Item	Level
Dust / Debris	Medium
Opaque Particles	Very Low

Analytic Methods and Formulas:

Calculated results may include one more significant figure than is mathematically justified in order to accommodate the client's needs.

IMS Laboratory Analytical Method: 2.2 (method for analyzing spore trap). Counting and identification performed at 600X magnification.

Spores per cubic meter is determined by: Total Spore Count x 4000 / (sampling rate x sampling time).

Note that this report may use mold-specific units of measure, such as Spores/cu. m and CFU/cu. m, for Sample Identifications which are not mold. Examples include pollen, fabric and fiberglass fibers, insect particles, and ash. In this context, "CFU" and "Spore" refer to individual pieces of the identified material. For Background Items, the Levels are defined thus: "Very Low" is present on less than 5% of sample area; "Low" is present on 6%-25% of sample area; "Medium" is present on 26%-50% of sample area; "High" is present on 51%-75% of sample area; "Very High" is present on 76%-100% of sample area.

IMS Laboratory, LLC is accredited through the AIHA LAP and participates in Environmental Microbiology Proficiency Testing, EMPAT #172958. Data is provided in compliance with AIHA LAP policy modules and ISO/IEC 17025:2017 guidelines.

Accredited Laboratory AIHA LAP, LLC Lab ID # 172958

Kathryn C. Langley 09/03/2024

Kathryn C. Langley, Laboratory Manager

[redacted]

4 - Spore Trap Comparison Chart

SAMPLING LOCATIONS

1: Attic

Spores per Cubic Meter

Mold Name \ Location #	1
Alternaria	
Arthrinium	
Ascospores	213
Basidiospores	373
Bipolaris / Drechslera group	
Chaetomium	
Cladosporium	853
Curvularia	
Erysiphe/Oidium	
Fusarium	
Ganoderma	53
Mitospores	53
Pen/Asp group	
Pithomyces	
Polythrincium	
Rust	53
Smuts/Periconia/Myxomycetes	
Stachybotrys	
Stemphylium	
Torula	
Unknown Fungi	
FUNGAL TOTAL	**1,600**
Pollen	213
Pollen	

Please refer to the Laboratory Results section for additional details.

[redacted]