Metro Boston Property Inspections, Inc.
575 Washington Street Unit 2C
Canton MA 02021
781-828-1972
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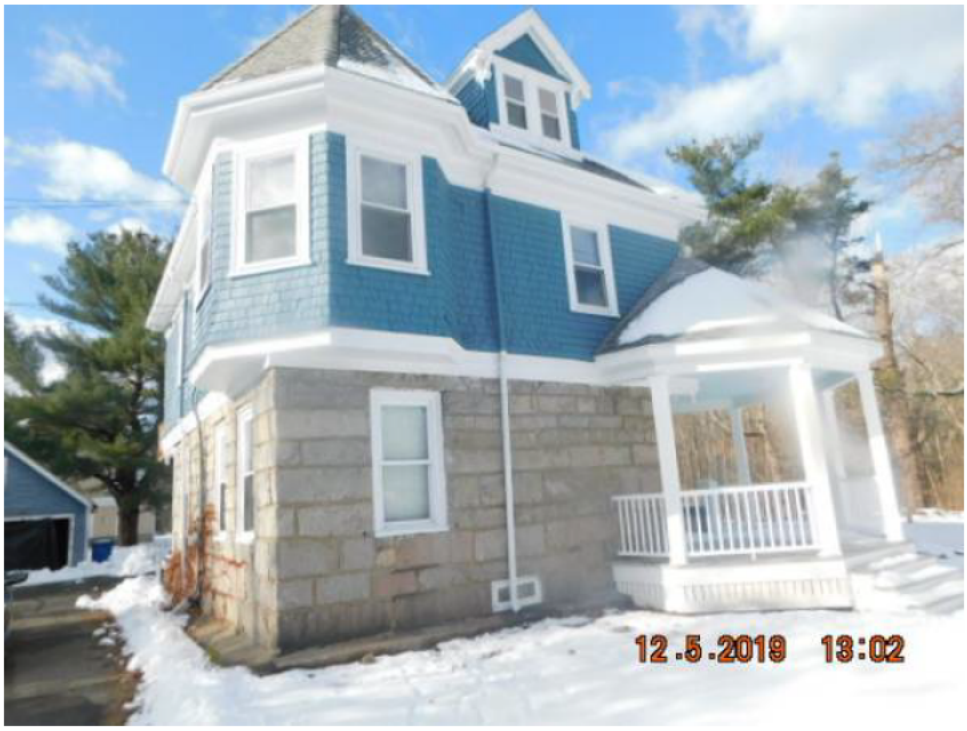
Inspection reference: 7452-431 West Street

Confidential Inspection Report

[redacted]

December 5, 2019



Prepared for:

[redacted]

Inspection Contents

Mold Assessment 3

Inspection: [redacted]

Mold Assessment

Client & Site Information:

Inspection Date & Time: Inspection Date: 12/5/2019
Start Time: 1:00 PM
End Time: 2:00 PM.

Client: [redacted]

Inspection Site: [redacted]

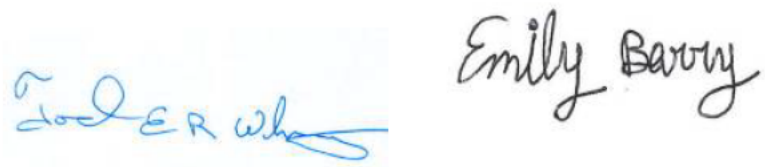
Dwelling Occupied? Yes.

People Present: Homeowner.

Inspectors Information

Inspector Tod E. R. Whiting, Emily Barry.

Signature



Building Characteristics:

The Main Entry Faces South.

Year Built: 1800.

Building Type: Two family.

Stories: 2.

Space Below Grade: Basement.

Building Size (SF) 2800.

Climatic Conditions:

Weather: Partly Cloudy, Snow Cover.

Soil Conditions: Frozen, Snow covered.

Outside Temperature (F): 30-40.

Indoor Temperature (F): 60-70.

Basement Temperature (F): 50-60.

Outside Relative Humidity (Percentage): 50-60.

Indoor Relative Humidity (Percentage): 40-50.

Basement Relative Humidity (Percentage): 50-60.

Executive Summary

Summary

A non-invasive visual inspection with sampling and mold laboratory analyses of air and surface samples was conducted at the subject property. The inspection and testing was conducted at the request of the client to extract samples for mold analysis in accordance with industry accepted standards and guidelines. The goals of the

inspection and testing were to describe mold levels and types within the subject property to determine if mold amplification is present and to identify potential mold growth sources, .

Scope

The inspection was initiated to determine the presence of mold growth and/or conditions associated with mold growth.
There are four potential outcomes of an initial assessment:

1) Neither mold nor associated conditions were readily observable;
2) Mold was not readily observable but associated conditions were;
3) Mold was readily observed but no associated conditions were; or
4) Both mold and associated conditions were readily observable.

Findings

Visible mold growth and conditions associated with mold growth were noted at the time of the inspection. Relative humidity readings and moisture meter readings indicated elevated moisture in the affected areas. Measures should be taken by appropriate persons to eliminate moisture intrusion into the building. The client should contact qualified professionals to conduct mold remediation within the subject property. Other findings, conclusions, and recommendations along with the scope and limitations of this assessment are further described in this report.

Area of Concern

Room Name — Bedroom.

Floor material — The floor covering material is hardwood.

Wall material — The walls are constructed of, Plaster over wood or metal lathe.

Ceiling material — The ceilings in this room are constructed of, plaster over wood or metal lathe.

Water penetration — No.

Suspect mold — No.

Surface moisture content — 0-10.

Air Samples — The laboratory analyses by Hayes Microbial for the indoor air samples extracted from the bedroom of the subject indicated total and individual spore counts considered high when compared to the outdoor control samples. The dominant genera of mold in the basement is Aspergillus/Penicillium type spores. Individual spore counts under 500 spores/cubic meter and total spore counts under 2000 spores/cubic meter are not considered a significant issue however the level of response is dependent on the sensitivity of the individual. See lab report for actual spore counts. Snow cover limits the reliability of the outdoor control sample.

Area of Concern

Room Name — Basement. Dust and debris were built up on the foundation wall. Dust is a food source associated with mold growth.

Floor material — Concrete.

Wall material — Stone and mortar.

Ceiling material — Open floor joist.

Water penetration — Yes, moisture penetration is noted at the bulkhead.

Suspect mold — yes. Mold growth noted on the foundation wall and floor joists.

Surface moisture content — 20-30.

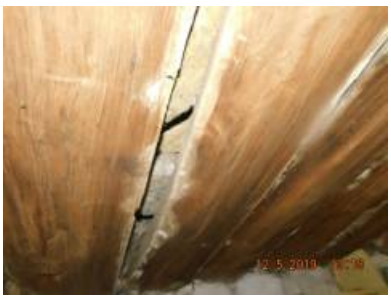
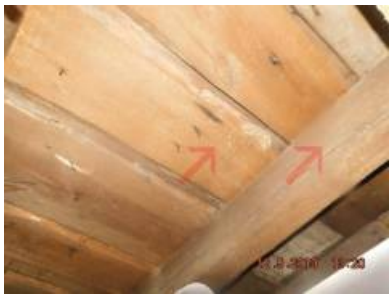
Air Samples — The laboratory analyses by Hayes Microbial for the indoor air samples extracted from this location of the subject indicated total and individual spore counts considered high when compared to the outdoor control samples. The dominant genera of mold in the basement is Basidiospore type spores. See lab report for actual spore counts
Individual spore counts under 500 spores/cubic meter and total spore counts under 2000 spores/cubic meter are not considered a significant issue however the level of response is dependent on the sensitivity of the individual. See lab report for actual spore

counts. Snow cover limits the reliability of the outdoor control sample.

Surface Samples

The laboratory analyses by Hayes Microbial for the indoor surface samples extracted from each location of the subject indicated the presence of mold growth. The dominant genera of mold in the basement is Cladisporium type spores on the floor joist/subfloor and Stachybotrys type spores on the foundation wall. See lab report for actual spore counts



Area of Concern

Room Name

Crawlspace.

Floor material

The floor material is dirt with a partially installed vapor barrier. This are is a source of moisture entry into the dwelling.

Conclusions

Conclusions

Based on the visual inspection, the client interview and the laboratory results of the air and surface samples the inspector makes the following conclusions: Visible mold growth and conditions associated with mold growth were noted at the time of the inspection. Relative humidity readings and moisture meter readings indicated elevated moisture in the affected areas. Measures should be taken by appropriate persons to eliminate moisture intrusion into the building. The client should contact qualified professionals to conduct further investigation and mold remediation within the subject property.

Recommendations

Work Plan
I General

1) The scope of work involves the remediation of mold in the affected areas of the basement and under floor crawlspace at [redacted]

2) The remediation work should be conducted by a healthy person experienced in mold remediation adhering to good work practices for removing mold and mold damaged/contaminated materials.

3) The contractor is responsible for performing the work in strict accordance with industry accepted standards of practice such as The IICRC publication S520 *Standard and Reference Guide for Professional Mold Remediation* as well as EPA, the Massachusetts Department of Environmental Protection and other local governing authorities to minimize the potential of airborne mold spores or other hazards associated with this project.

4) The contractor shall ensure that appropriate personal protective equipment (PPE) is used by workers performing the specified scope of work. The use of PPE shall comply with governing state and federal regulations and shall include, at a minimum, respirators (suitable for anticipated hazard), rubber gloves, disposable suits, eye protection (safety glasses with side shields or full face shields) and rubber overshoes/boots. Workers shall be required to decontaminate any gloves, boots respirators and other work equipment removed from the work area. Further, workers will have a decontamination station available where they shall be required to wash all exposed skin areas (face, neck, hands etc.) upon leaving the work area.

5) The contractor shall use clean equipment and new equipment filters including but not limited to HEPA air filtration/exhaust units and HEPA vacuums.

II Description of Work

1) The scope of work is as follows:

a. The contractor shall furnish all labor, materials, facilities, equipment, services, and insurance necessary to perform the work as well as all and any permits required to perform the work.

b. The goal of the work scope should be to implement recommendations for the affected areas described in this report and any other areas which may be discovered through additional inspections, testing or during remediation and repair. The overall goal is to return the affected areas of the subject property to Condition 1: (Normal Fungal Ecology) as defined by IICRC/ANSI *S520 Standard and Reference Guide for Professional Mold Remediation.*

c. Proper isolation with critical barriers and negative air pressure of the affected areas and pathways used for disposal should be conducted during remediation, cleaning and removal of contaminated materials. This isolation should not be removed until the project has been determined to have been returned to Condition 1 status through proper post remediation verification.

d. All non-essential items stored in the basement and under floor crawlspace should be disposed.

e. HEPA vacuum and damp wipe all exposed/unprotected surfaces in the basement, especially the foundation walls and the concrete floor.

f. Abrasively remove all visible growth and or staining from the exposed structural framing components as well as any plywood or wood surface where removal is not possible

g. HEPA vacuum and damp wipe all exposed/unprotected surfaces throughout the subject property especially in the bedroom and pathways used for disposal

h. After the visible growth has been removed seal all porous, semi porous and non-porous surfaces with an industry accepted anti-microbial sealant to inhibit future growth.

i. Complete any final cleanup and or repairs required by the project.

j. Remove trash and debris and old vapor barrier in the crawl

space

k. Once remediation has been completed but prior to post remediation verification the contractor should run reciprocating fans, air scrubbers and negative pressure for 48 hours. During this time the contractor should periodically disturb the settled dust. This can be accomplished using fans, leaf blowers or other similar device. These devices should be cleaned and sanitized prior to use.

l. After the 48 hours have elapsed the property should be allowed to return equilibrium for 24 hours prior to post-remediation verification

m. Prior to demobilizing from the site the project should undergo post-remediation verification by an independent indoor environmental professional

n. After clearance testing is performed install a proper vapor barrier in the crawlspace

o. take steps to eliminate moisture penetration into the basement

2) To achieve reasonable air flow inside the work area a minimum of one half (0.5) air changes per hour must be maintained using HEPA filtered exhaust units. Pressure differential shall be monitored.

3) The work shall be performed in a manner that generates the least amount of dust or airborne debris; however water or liquids shall not be used to reduce airborne dust/particulate.

4) All waste generated during the work shall be promptly bagged or wrapped in plastic sheeting and removed from the site for disposal as conventional waste. If waste is not live loaded or immediately removed from the property the disposal truck or dumpster shall be located at least 50 feet from the house, where possible.

5) It is not uncommon and it is generally accepted that as remediation and further inspections progress, additional areas of mold contamination may be exposed that expand the full scope of work for remediation and repairs.

6) Cleaners/Sanitizers: The contractor shall use only industry accepted cleaners and sanitizers.

Limitations

Inspection limitations

This report or information contained herein should not be interpreted to imply any conclusions, opinions, or assessment related in any manner as to whether any health risks or conditions to individuals exposed to the building conditions were or were not present at the time of our inspection/testing or may not develop or increase at some time in the future. It is not a human health assessment of any kind. This inspection indicates the level of fungal spores in the areas tested. This report and assessment does not address other indoor air quality concerns such as volatile organic compounds, carbon dioxide, carbon monoxide, heating-ventilation-air-conditioning (HVAC), bacteria, viruses, temperature, allergens, formaldehyde, lead, asbestos, and other contaminants associated with human health risk exposure. This inspection and testing makes representation as to the conditions of the accessible areas of the home only. Only limited access was available in the attic. Many items were stored in the home.

This report represents the results from a limited, noninvasive visual inspection and associated sampling conducted within the subject unit only as described in this report only of the accessible areas of the subject property. No assessment of the basement or any other unit of the building was performed. Please be advised that these tests and results are an indicator of conditions at the time the sampling occurred. This sampling is considered a snapshot in time of the fungal presence. As environmental conditions can change over time, this is an indicator of the type and level of mold in the area tested at the time the samples were taken and shall not be construed as representing or predicting conditions that may exist at a later time or have existed at a previous time.

The results, findings, conclusions, and recommendations in this report are not a guarantee or warranty of any kind that mold growth will not develop, increase, or return

at any future time within the building.

The opinions and conclusions presented in this report are based on the site conditions observed and information reviewed at the time of this assessment. Information pertaining to site conditions or changes may exist that Whiting Environmental Building Inspection is not aware of or which we have not had the opportunity to evaluate within the time available for this assessment.

There is a possibility that even with the proper application of these methodologies there may exist on the subject property conditions that could not be identified within the scope of the assessment or which were not reasonably identifiable from the available information. The methodologies of this assessment are not intended to produce all inclusive or comprehensive results, but rather to provide The client with information relating to the subject property.

This report, both verbal and written, is for the benefit of the client. This report has no other purpose and may not be relied upon by any other person or entity without the written consent of Metro Boston Property Inspections, Inc. The client may release this report to third parties; however, such third party in using this report agrees that it shall have no legal recourse against Whiting Environmental Building Inspection

Background on Mold

Health Effects

The presence or level of certain mold and mold spores inside a building can result in adverse health effects to prone individuals ranging from mild to severe. Health effects may include, but are not limited to; asthma, allergy symptoms, watery eyes, sneezing, wheezing, difficulty breathing, blurry vision, sinus congestion, sore throat, cough, aches and pains, skin irritation, headaches, infections, memory loss, and fever. As humans vary greatly in their chemical make-up, so does the individuals reaction to mold exposure. For some people a small number of spores from certain molds can cause ill effects, in others it may take many more before effects are noticed.

Whether or not symptoms develop in people exposed to fungi depends on the nature of the fungal material, the amount of exposure, and the susceptibility of exposed persons. Susceptibility varies with the genetic predisposition (e.g. allergic reactions do not always occur in all individuals), age, state of health, and concurrent exposures. For these reasons, and because measurements of exposure are not standardized and biological markers of exposure to fungi are largely unknown, it is not possible to determine "safe" or "unsafe" levels of exposure for people in general. EPA, CDC, or the Massachusetts Department of Public Health to date, have not established any PEL (permissible exposure limit) for mold.

HAYES MICROBIAL CONSULTING

#19050723

Analysis Report prepared for

Metro Boston Property Inspections

575 Washington Street
Unit 2C
Canton, MA 02021

Phone: **(781) 828-1972**

[redacted]

Collected: **December 5, 2019**
Received: **December 10, 2019**
Reported: **December 10, 2019**

We would like to thank you for trusting Hayes Microbial for your analytical needs!
We received 5 samples by US Mail in good condition for this project on December 10th, 2019.

The results in this analysis pertain only to this job, collected on the stated date, and should not be used in the interpretation of any other job. This report may not be duplicated, except in full, without the written consent of Hayes Microbial Consulting, LLC..

This laboratory bears no responsibility for sample collection activities, analytical method limitations, or your use of the test results. Interpretation and use of test results are your responsibility. Any reference to health effects or interpretation of mold levels is strictly the opinion of Hayes Microbial. In no event, shall Hayes Microbial or any of its employees be liable for lost profits or any special, incidental or consequential damages arising out of the use of these test results.

Steve Hayes, BSMT(ASCP)
Laboratory Director
Hayes Microbial Consulting, LLC.

EPA Laboratory ID: VA01419

Lab ID: #188863

DPH License: #PH-0198

Tod Whiting
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7452 [redacted]

#19050723

Spore Trap
SOP - HMC#101

Sample Number	1	7452-1		2	7452-2		3	7452-3	
Sample Name	Basement			Bedroom			Outdoors		
Sample Volume	25.00 liter			25.00 liter			25.00 liter		
Reporting Limit	40 spores/m³			40 spores/m³			40 spores/m³		
Background	3			2			2		
Fragments	ND			ND			ND		
Organism	**Raw Count**	**Count / m³**	**% of Total**	**Raw Count**	**Count / m³**	**% of Total**	**Raw Count**	**Count / m³**	**% of Total**
Alternaria									
Ascospores	1	40	12.5%				4	160	57.1%
Aspergillus|Penicillium				10	400	90.9%			
Basidiospores	5	200	62.5%	1	40	9.1%	3	120	42.9%
Bipolaris|Drechslera									
Chaetomium									
Cladosporium									
Curvularia									
Epicoccum									
Fusarium									
Memnoniella									
Myxomycetes	2	80	25.0%						
Pithomyces									
Stachybotrys									
Stemphylium									
Torula									
Ulocladium									
Total	8	320	100%	11	440	100%	7	280	100%

Water Damage Indicator | Common Allergen | Slightly Higher than Baseline | Significantly Higher than Baseline | Ratio Abnormality

Collected: **Dec 5, 2019** Received: **Dec 10, 2019** Reported: **Dec 10, 2019**

Project Analyst: Connor Gailliot, BS Date: 12 - 10 - 2019

Reviewed By: Steve Hayes, BSMT Date: 12 - 10 - 2019

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7452 [redacted]

#19050723

Direct Analysis
SOP - HMC#102

#4	Bio-Tape (1.00 cm2)	Organism	Spore Estimate	Mycelial Estimate
	7452-4 - Foundation Wall	Stachybotrys	Light	ND

#5	Bio-Tape (1.00 cm2)	Organism	Spore Estimate	Mycelial Estimate
	7452-5 - Floor Joist	Cladosporium	Very Heavy	Many

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7452 [redacted]

#19050723

Spore Trap Information

Reporting Limit	The Reporting Limit is the lowest number of spores that can be detected based on the total volume of the sample collected and the percentage of the slide that i counted At Haye Microbial, 100% of the lide i read o the LOD i ba ed olely on the total volume Raw pore count that exceed 500 pore will be estimated.
Blanks	Results have not been corrected for field or laboratory blanks.
Background	The Background i the amount of debri that i pre ent in the ample Thi debri con i t of kin cell , dirt, du t, pollen, drywall du t and other organic and non-organic matter. As the background density increases, the likelihood of spores, especially small spores such as those of Aspergillus and Penicillium may be ob cured The background i rated on a cale of 1 to 5 and each level i determined a follow **NBD** No background detected due to po ible pump or ca ette malfunction Recollect ample (Field Blank will di play NBD) **1 :** <5% of field occluded. No spores will be uncountable. **2** 5 25% of field occluded **3 :** 25-75% of field occluded. **4** 75 90% of field occluded **5 :** >90% of field occluded. Suggested recollection of sample.
Fragments	Fragments are small pieces of fungal mycelium or spores. They are not identifiable as to type and when present in very large numbers, may indicate the presence of mold amplification.
Control Comparisons	There are no national standards for the numbers of fungal spores that may be present in the indoor environment. As a general rule and guideline that is widely accepted in the indoor air quality field, the number and type of pore that are pre ent in the indoor environment hould not exceed tho e that are present outdoors at any given time. There will always be some mold spores present in "normal" indoor environments. The purpose of sampling and counting pore i to help determine whether an abnormal condition exi t within the indoor environment and if it doe , to help pinpoint the area of contamination Spore counts should not be used as the sole determining factor of mold contamination. There are many factors that can cause anomalies in the comparison of indoor and outdoor ample due to the dynamic nature of both of tho e environment
Water Damage Indicator Common Allergen Slightly Higher than Baseline ignificantly Higher than Baseline Ratio Abnormality	**Blue:** These molds are commonly seen in conditions of prolonged water intrusion and usually indicate a problem. **Green:** Although all molds are potential allergens, these are the most common allergens that may be found indoors. **Orange:** The spore count is slightly higher than the outside count and may or may not indicate a source of contamination. **Red:** The spore count is significantly higher than the baseline count and probably indicates a source of contamination. **Violet:** The types of spores found indoors should be similar to the ones that were identified in the baseline sample. Significant increases (more than 25%) in the ratio of a particular spore type may indicate the presence of abnormal levels of mold, even if the total number of spores of that type is lower in the indoor environment than it was outdoors.
Color Coding	Fungi that are present in indoor samples at levels lower than 200 per cubic meter are not color coded on the report, unless they are one of the water damage indicator

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7452 [redacted]

#19050723

Direct Analysis Information

Spore Estimate		Percentages
ND	None Detected	0%
Rare	Less than 10 spores	< 1%
Light	10 - 99 spores	1-10%
Moderate	100 - 999 spores	11-25%
Heavy	1000 - 9999 spores	26-50%
Very Heavy	10000 or greater spores	51-100%

Mycelial Estimate	
ND	None Detected No active growth at site.
Trace	Very small amount of Mycelium Probably no active growth at site.
Few	Some Mycelium Possible active growth at site.
Many	Large amount of Mycelium Probable active growth at site.

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Organism Descriptions

Ascospores

Habitat: A large group consisting of more than 3000 species of fungi. Common plant pathogens and outdoor numbers become very high following rain. Most of the genera are indistinguishable by spore trap analysis and are combined on the report.

Effects: Health affects are poorly studied, but many are likely to be allergenic.

Aspergillus|Penicillium

Habitat: The most common fungi isolated from the environment. Very common in soil and on decaying plant material. Are able to grow well indoors on a wide variety of substrates.

Effects: This group contains common allergens and many can cause hypersensitivity pneumonitis. They may cause extrinsic asthma, and many are opportunistic pathogens. Many species produce mycotoxins which may be associated with disease in humans and other animals. Toxin production is dependent on the species, the food source, competition with other organisms, and other environmental conditions.

Basidiospores

Habitat: A common group of Fungi that includes the mushrooms and bracket fungi. They are saprophytes and plant pathogens. In wet conditions they can cause structural damage to buildings.

Effects: Common allergens and are also associated with hypersensitivity pneumonitis.

Cladosporium

Habitat: One of the most common genera worldwide. Found in soil and plant debris and on the leaf surfaces of living plants. The outdoor numbers are lower in the winter and often relatively high in the summer, especially in high humidity. The outdoor numbers often spike in the late afternoon and evening. Indoors, it can be found growing on textiles, wood, sheetrock, moist window sills and in HVAC supply ducts.

Effects: A common allergen, producing more than 10 allergenic antigens and a common cause of hypersensitivity pneumonitis.

Myxomycetes

Habitat: Found on decaying plant material and as a plant pathogen.

Effects: Some allergenic properties reported, but generally pose no health concerns to humans.

Stachybotrys

Habitat: Commonly found in soil and on decaying plant material. It is cellulolytic, and can be found indoors on wet materials containing cellulose, such as wallboard, ceiling tile, and other paper-based materials. It is found outdoors on decaying plant material although it is rarely detected on outdoor air samples.

Effects: Allergenic properties are poorly studied and no cases of infection have been reported in humans. They do however produce potent tricothecene mycotoxins. The toxins produced by this fungus can suppress the immune system affecting the lymphoid tissue and the bone marrow. The mycotoxin is also reported to be a liver and kidney carcinogen.