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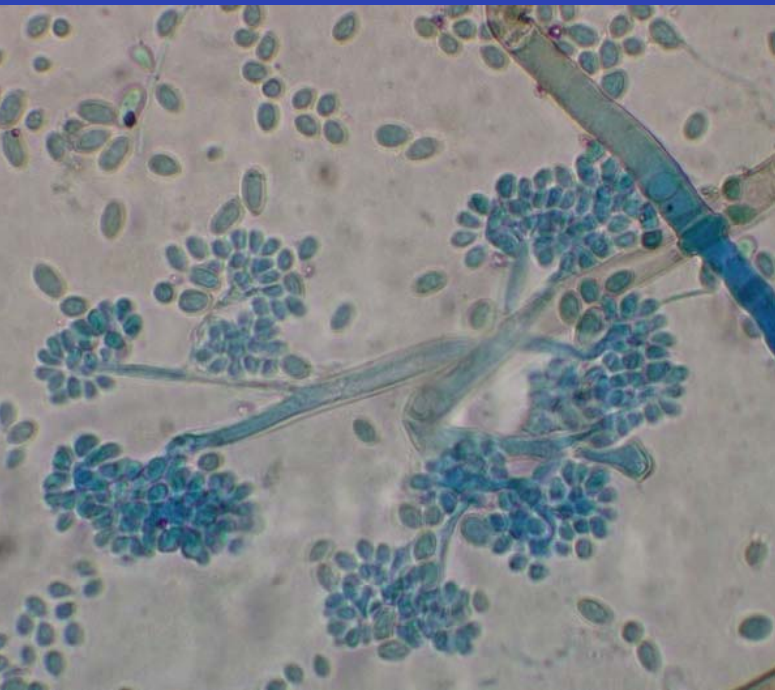
The
Professional's Choice
for **Environmental TestingSM**

PRESENTS

Mold

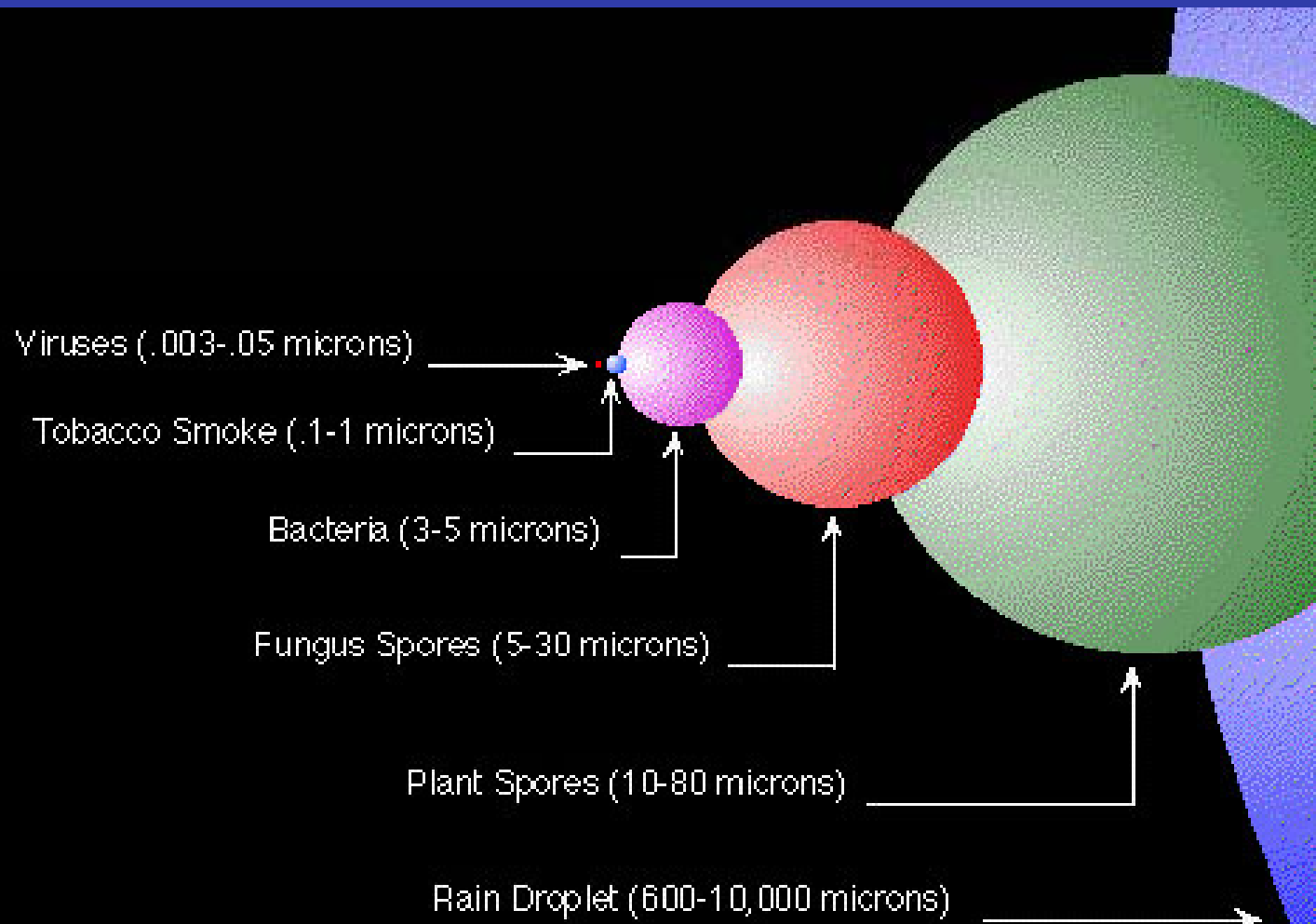
What you should know.

What is mold?



- **Mold is considered a sub-group of the Fungi Kingdom**
- **Mold are asexual fungi**
- **Present on clothing, carpet, air we breathe, everywhere**
- **Types Include: Aspergillus, Penicillium, Botrytis, Stachybotrys, Fusarium, etc.**
- **Produce spores that are extremely small and can be airborne**

Relative size scale



MOLD FACTS

- WATER IS THE PROBLEM, MOLD IS THE SYMPTOM
- YOU CAN'T GET RID OF MOLD
- RARE OCCURRENCES OF A MOLD SPORE MAY NOT BE SIGNIFICANT

WHAT DOES MOLD DO?

- Decay dead plant material
- Produce mycotoxins
- Some are pathogenic, toxigenic, allergenic
- Many commercial uses, e.g., medicine, food, commercial products



Mold in History

- **Leviticus 14:37-55 (House Plague)**
- **Mushroom poisonings happen every day from eating wild mushrooms**
- **Ergot poisoning (St. Anthony's "fire" and Salem Witch Trials)**
- **Irish potato famine caused millions of Irish to immigrate to US because a mold killed the staple crops (potato)**

What Does Mold Need to Grow?

- Can grow at temperatures as low as -70°C and over 50°C
- Most thrive at between $18 - 32^{\circ}\text{C}$
- Need moisture, food source, and amiable temperature

Just Add Water and They Grow!



Mold in buildings



- Mold have found a great climate and plenty to eat in buildings
- Almost no competition or predators
- Really are a natural part of the building
- Some types are very common indoors, e.g., *Cladosporium*, *Stachybotrys*, *Penicillium*, *Aspergillus*



Mold Contamination



- Presence of active growth (past or current) of mold can impact your health
- Airborne mold can be inhaled



Dry rot fungus growing in a house



Production of a fruitbody of *Serpula lacrymans* in an apartment
three weeks! The floor has turned brown from spores.

Mold Exposure

- Breathing in spores from the air
- Skin contact from handling an item that has mold growing on it
- Eating without washing your hands after handling moldy objects

Health Effects of Mold

Allergic reaction = by far the most common, inhalation of spores or touching

Asthma = mold spores can trigger or make asthma worse

Hypersensitivity pneumonitis = develop after acute or chronic exposure

Opportunistic infections = invasion into an immunocompromised host

Mycotoxin = fungal poisons, only anecdotal evidence for humans

Glucans = Organic Dust Toxic Syndrome (ODTS) flu-like symptoms

"Red Flags" Reasons for Testing

Question #1: *Have you had a recent water incursion?*

Visible mold: velvety, slimy, white, black, green, pink, smelly

Up to 50% of all homes have been water compromised

Discoloration, high RH (above 60%)

Construction defects, HVAC and plumbing problems, improper venting or grading

Human sensitivity: itchy eyes, burning sensation on skin, musty odor, change in breathing pattern reported by occupant or you during inspection

Why Sample?

- Answer the question, "Do I have mold growing in my home?"
- Are people being exposed higher amounts of mold than what is in the background?
- Solve building defects (e.g., dryrot, warping, etc.)

Air Sample Report

PRO-LAB/SSPTM INC.

1675 North Commerce Parkway
Weston, Florida 33326
Toll Free: 800-427-0550

Test Address:
570 W Garfield St, Hollywood, Florida 33021

Client:

FUNGI BOB
570 W GARFIELD ST
HOLLYWOOD, Florida 33021

Phone: (954) 555-5555
Fax:
Email: bob@fungi.com

Pro-Lab Number: 041404-0215
Date Collected: 4/14/2004
Collection Location: 1st Floor
Sample Submitted: AIR-O-CELL
Volume (L): 150
Serial #: 45135

Spore Identification	Raw Count	Spores / M3
Acremonium	0	0
Aspergillus	20	133
Campylobacter	8	53
Clavariadelphus	16	107
Clavaria	0	0
Claviceps	0	0
Clavosporium	0	0
Clavosporium	40	267


Total Results (Spores /		
Biological Particles	Raw Count	Particles / M3
Dust/Insect Fragments	0	0
Pollen	0	0

Analyse Date: 4/14/2004
Analyse ID: 0

Mold Analysis Report

NON-VIABLE Spore Trap
Analysis Method SSPTM SOP 0110

Report Number: 041404-0215
Received Date: 4/14/2004
Report Date: 10/11/2005


John D. Shane Ph.D., QA Manager

Comments:

Sample 1 DEBRIS: MODERATE

041404-0214
4/14/2004
Outside
AIR-O-CELL
150
3256

Raw Count	Spores / M3
12	80
12	80
0	0
0	0
24	160
12	80
20	133
0	0

Raw Count	Particles / M3
12	80
8	53

Analyse Date: 4/14/2004
Analyse ID: 0

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Email: bob@fungi.com

The following fungal descriptions are pertinent to samples collected. General characterization of mold is made with respect to their most common impact to human health. Many genera of molds have species with varying

Spore Name	Description
Acremonium	Not Found
ARTHROSPORA	A COSMOPOLITAN FILAMENTOUS FUNGUS OCCASIONALLY FOUND INDOORS. ISOLATED FROM PLANT DEBRIS AND SOIL. THERE ARE NO INFECTIONS SO FAR REPORTED IN HUMANS OR ANIMALS.
ASPERGILLUS	THIS SPECIES IS CONSIDERED COMMON TO INDOOR ENVIRONMENTS. IT IS WIDESPREAD IN THE SOIL AND ON PLANTS AND IS ALSO CONSIDERED A COMMON CONTAMINANT OF FOOD. IT HAS A MUSTY ODOR. IT IS COMMONLY BEING IMPLICATED IN PULMONARY DISEASE IN IMMUNOCOMPROMISED HOSTS. IT HAS ALSO BEEN REPORTED TO CAUSE SKIN INFECTIONS. MANY SPECIES PRODUCE MYCOTOXINS, WHICH MAY BE ASSOCIATED WITH DISEASE IN HUMANS AND OTHER ANIMALS. TOXIC PRODUCTION IS DEPENDENT ON THE SPECIES OR A STRAIN WITHIN A SPECIES AND ON THE FOOD SOURCE FOR THE FUNGUS. SOME OF THESE TOXINS HAVE BEEN FOUND TO BE CARCINOGENIC IN ANIMAL SPECIES. SEVERAL TOXINS ARE CONSIDERED POTENTIAL HUMAN CARCINOGENS.
CERCOSPORA	PARASITE OF HIGHER PLANTS, CAUSING LEAF SPOT. COMMON OUTDOORS IN AGRICULTURAL AREAS ESPECIALLY DURING HARVEST. NO TOXIC DISEASES HAVE BEEN DOCUMENTED TO DATE.
FUSARIUM	A COMMON SOIL FUNGUS. IT IS FOUND ON A WIDE VARIETY OF PLANTS. THE FUNGUS ALSO BEEN FOUND IN HUMIDOSPHERES. SYMPTOMS MAY OCCUR EITHER THROUGH INGESTION OF CONTAMINATED FOODS OR INHALATION OF SPORES. IN SEVERE CASES, THE FUNGUS CAN PRODUCE HEMORRHAGIC SYNDROME IN HUMANS. THIS IS CHARACTERIZED BY NAUSEA, VOMITING, DIARRHEA, DERMATITIS, AND EXTENSIVE INTERNAL BLEEDING. FREQUENTLY INVOLVED IN EYE, SKIN, AND NAIL INFECTIONS.
PHYCOSPORA	GROWS ON DEAD GRASS AND PLANTS. PROLONGED EXPOSURE CAN CAUSE FACIAL ECZEMA. CAUSES TYPE II ALLERGIC (ANAPHYLACTIC) SYMPTOMS, ASTHMA.
RHODOTORULA	RHODOTORULA IS COMMONLY IDENTIFIED IN INDOOR AIR SAMPLES. THEY CAN CAUSE PROBLEMS IF A PERSON HAS HAD PREVIOUS EXPOSURE AND DEVELOPED HYPERSENSITIVITY. YEAST CAN BE ALLERGENIC TO SUSCEPTIBLE INDIVIDUALS WHEN PRESENT IN SUFFICIENT CONCENTRATIONS.

Where is mold found?

- Food
- Clothing
- Inside HVAC systems and duct work
- Front and back side of drywall
- Basements, Kitchens, Washer / Dryer area and bathrooms

"Sick Buildings"

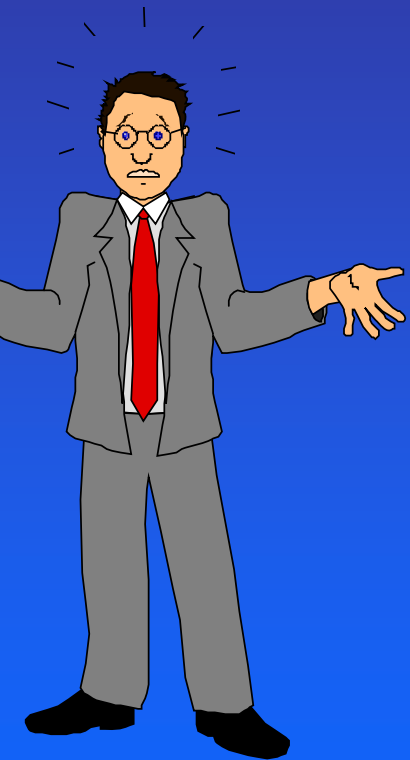
Buildings don't get sick, people do

One building can't contaminate another one

"Sick" buildings can't be cured

Key to fungal growth in buildings is excess moisture

Frequently asked questions.



- What kind of mold do I have and is it toxic?
- How did the mold get in my house?
- How can I tell if there is mold in my house?
- How can I stop mold from growing in my house?
- How is mold tested for and measured?
- How can we clean up the mold?
- How can we prevent it from returning?
- What are the risks?

THE “SO WHAT”

- **Water is the problem, mold is the symptom**
- **Consider hidden water damage**
- **Check for visible water damage**
- **Test when “Red Flags” are present**

Real Estate Deals Do Not Need To Be Broken!

Testing is the first step

Bring your home back to pre-loss conditions

If there is mold growth in the home you must
have a professional remediation company clean
up the mold and fix the water problem.

Questions

