



Department of Environmental Health

Indoor Air Quality *Fact Sheet*

Testing For Mold

This *Fact Sheet* was prepared to explain why mold testing is usually not necessary as the first response to indoor air quality concerns and to help people better understand what mold testing can and cannot be expected to do. Contrary to much currently popular opinion, mold testing is often not an appropriate or effective way to answer many of the questions that lead people to ask for it. In a great deal of cases that come to the attention of this department, people seeking mold testing really need a thorough investigation into moisture problems and the damage it can cause – often times this is something they can do on their own.

LIMITATIONS OF MOLD TESTING

There are many testing methods that can detect molds. They can be used to find mold particles suspended in the air, in settled dust, or growing on surfaces of building materials and furnishings. Some methods can identify a portion of the types of live (viable) molds in a sampled environment, but these also miss or undercount those that are not live or won't grow well on the nutrients used to incubate the sample. Other methods are better able to characterize the total amount of molds in a sample (including the non-living portion), but are not very good for identifying the specific types (species) of molds. Even tests that are done well only give a partial estimate of the amount and types of molds actually collected in a sample or in the sampled environment.

It is vital to appreciate that a test result only gives a “snap-shot” estimate for a single point in time and location – how well it represents other locations and times is uncertain since the amounts and types of mold in the environment is always changing. This variability can be especially large for airborne molds, with significant changes occurring over the course of hours or less. Caution must also be used in interpreting surface testing results, since mold growth or deposition may not be uniform over an area and may increase or decrease as time passes. Unless many samples are taken over a period of time and the investigator has been mindful of building operations and activities during the testing, the results might not be very representative of typical conditions. On the other hand, tests reflecting typical conditions may also miss evidence of problems that only occur infrequently.

Despite these limitations, there are situations where mold testing by skilled investigators may be valuable – for example, to “justify” remediation expenses or to document that cleanup has met expectations. In some cases, tests can also provide clues that may help find hidden mold, but the growth still has to be found by looking for it so that it can be removed. Experienced investigators should evaluate whether testing is warranted and if they are ethical, they should advise against testing whenever the problem can be corrected without it. Testing may be useful as part of an investigation, but it is never a substitute for a thorough visual inspection.

Doing mold testing well is often expensive. Consumers should recognize that if the testing is not needed or it is done poorly, their money is being wasted instead of being used to make repairs necessary to solve the problem. It is up to consumers to protect their own interests when they hire someone to perform mold testing. People are advised to attempt to investigate potential mold problems on their own first. The basic goals of any mold investigation are always twofold: 1) find the locations of mold growth, and 2) determine the sources of the moisture. If these can be answered by simpler or more cost-effective methods, mold testing is probably not a wise use of resources.

WHAT TESTING CANNOT DO

As described earlier, the commonly used testing methods are limited in what they can detect and measure. Skilled investigators are aware of these limitations and do not rely on testing when it is not appropriate. However, many people have unrealistic expectations of what mold testing can do and they can be taken advantage of by those who perform testing poorly or for inappropriate reasons. Below are some impractical reasons commonly given for requesting mold testing.

Poor reason for testing #1: “To find out if there is mold”

A complex mixture of mold particles normally exists in all occupied indoor environments. If appropriate testing is done, it is expected that molds will be found. There is, however, an important distinction between the normal presence of mold particles, versus mold growth and accumulation indoors. Unfortunately, even when it is done well, testing may not be able to distinguish between “normal” and “problem” conditions and it may even give misleading results.

When mold is allowed to grow and multiply indoors, it poses a potential health risk and damages what it grows on. When mold growth is visible or mold odors can be smelled, it is common sense that there is a problem that should not be tolerated.

Poor reason for testing #2: “To identify what type of mold is present”

Some testing can be used to identify a portion of the live mold in a sample by growing it in the lab. This gives only a partial description of the total amount of molds, because those not present at the sampled time and location or those that did not grow in the sample are not “seen” by the analysis. Most importantly, nonliving molds will not be identified, but they can still contribute significantly to health complaints.

From a practical, health-protective perspective, knowing the types of molds is usually not very important because any indoor mold growth presents a problem. The problem should be corrected regardless of the types of molds that can be identified. Appropriate guidelines for removing mold contamination are based on “how much” not “what type” or even if the mold is alive or dead.

Poor reason for testing #3: “To learn if the mold is the toxic kind”

Many, if not all, molds may produce one or more substances broadly called “mycotoxins.” Molds that are known to be able to produce mycotoxins are referred to as “toxigenic.” Mycotoxins may harm living tissue if enough of the agent enters the body, but science does not yet know how much of the many mycotoxins that could be present are necessary to harm a person, especially by breathing it. It is simply safest to assume at this time that any molds may produce mycotoxins or other harmful substances in some circumstances and they ought to be removed.

Testing for mold is not the same as testing for mycotoxins. Since toxigenic molds may or may not be producing mycotoxins depending on the environmental conditions, their presence does not necessarily indicate that known mycotoxins are also present or that occupants will be harmed. Likewise, failing to detect molds that are currently recognized to potentially produce mycotoxins does not mean that mycotoxins or other harmful substances are absent. Any mold growth indoors should be safely removed regardless of whether toxigenic species have been found.

Poor reason for testing #4: “To find the cause of health complaints”

It can be very difficult to conclude if and how occupants may be impacted by a specific mold problem. For one thing, the full range of health effects caused by molds is poorly understood at this time. Whether health effects will occur depends, for each person, on how much mold gets into their body, the amount and potency of various substances that the mold mixture can contain, and the unique susceptibility of each person to the effects of these substances. Unfortunately, mold tests alone will not determine if a specific problem environment is causing a person’s complaints.

Even when mold contamination is found in an area where health problems are occurring, it is often difficult to conclude that the mold is the actual cause of an individual’s specific complaint since other contaminants commonly present in damp or water-damaged settings can also cause or contribute to the complaints associated with moldy environments. Indeed, focusing too heavily on mold alone can be a poor strategy if other potential causes of complaints are not also addressed. Nevertheless, such an association of complaints to evidence of mold contamination is reason enough to remove the mold and correct the underlying causes of excess moisture.

One of the biggest problems related to mold testing happens when people misinterpret equivocal or negative findings. It is a common, yet serious error to conclude that a mold problem does not exist simply because tests failed to find evidence of it. Most mold testing simply cannot prove the absence of a problem, and it should never be used as the basis for dismissing complaints or to defend inadequate efforts to investigate or solve potential problems.

Poor reason for testing #5: “To determine if the environment is safe”

At this time, it is unknown what level of mold is “safe” or how much is necessary to cause health problems. Mold tests cannot measure all the molds in an environment or how much occupants are exposed to. Such testing can also miss evidence of problems and results may mislead or be misused. It is prudent to assume that any visible amount of mold may potentially cause illness and the best approach is to remove this potential threat as soon as it can be done safely. Similarly, it is reasonable to conclude that an area should be relatively safe with regard to mold if all visible growth was removed, the surrounding areas thoroughly cleaned, and it remains dry and free of mold odors.

Poor reason for testing #6: “To decide how to correct a mold problem”

Knowing the specific type of mold does not change what ought to be done to clean up the mold or fix the moisture problem. All mold problems should be handled in the same general way, with safety precautions based mainly on the extent of the contamination and how likely the mold will be disturbed by removal activities. All visible mold growth should be captured and physically removed to the greatest extent possible. In all cases, fixing the moisture problem is critical.

FINDING A MOLD PROBLEM

Among health professionals and industry experts, there is a general consensus that mold testing is **not** recommended in many cases, especially as the first response to an indoor air quality concern. Instead, careful detailed visual inspection and recognition of moldy odors should be used to find problems needing correction. Efforts should focus on areas where there are signs of liquid moisture or water vapor (humidity) or where moisture problems are suspected. The investigation goals should be to locate indoor mold growth to determine how to correct the moisture problem and remove contamination safely and effectively.

ADDITIONAL INFORMATION ON INDOOR AIR QUALITY AND MOLD

City of Wichita Department of Environmental Health
Indoor Air Quality Program
Phone: (316) 268-8351
Home Page: <http://www.wichita.gov/CityOffices/Health/Environmental/>

Kansas Department of Health & Environment
Lead and Healthy Homes Programs
Phone: (866) 865-3233

U.S. EPA
IAQ Information Clearinghouse
Phone: (800) 438-4318 or (703) 356-4020

Online resources:

U.S. EPA Indoor Air Quality (IAQ) Home Page: www.epa.gov/iaq

New York City Department of Health, "Guidelines on Assessment and Remediation of Fungi in Indoor Environments": www.nyc.gov/html/doh/html/epi/moldrpt1.html

Minnesota Department of Health, Environmental Health Division, indoor air issues:
www.health.state.mn.us/divs/eh/indoorair/index.html

American Industrial Hygiene Association (AIHA), "The Facts About Mold":
www.aiha.org/GovernmentAffairs-PR/html/oomold.htm

Centers for Disease Control and Prevention, National Center for Environmental Health, Air Pollution and Respiratory Health Branch: www.cdc.gov/nceh/airpollution/mold/

Building Science Corporation, publications and papers dealing with mold issues:
www.buildingscience.com/resources/mold/default.htm

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