A new study regarding the "ERMI" mould index appears in the January 2015 edition of the *Journal of Occupational and Environmental Hygiene*. That study like so many others demonstrate that the use of such devices remain of virtually no utility. The do-it-yourself mold tests that are appearing on the market, such as the EPA “ERMI” kit and IAQ Pro 5-Minute Home Mold Test are misleading, and cannot be used to determine if an home has a problem.

The misleading assumption associated with products like the IAQ Pro 5-Minute Home Mold Test is that the product determines if a home has a mould problem, and the selling point is that the “analysis” is very accurate. However, having a sensitive or accurate analysis method is meaningless if the sample from which the analysis is derived is not capable of determining the significance of the result. Such is the case with the IAQ Pro 5-Minute Home Mold Test.

Since ALL houses without exception, contain “black moulds” and we know that ALL houses, without exception contain *Aspergillus* and *Penicillium* and *Stachybotrys*, and the IAQ Pro 5-Minute Home Mold Test only tells us that these are present, what is the point of the “test?”

Similar DIY mould testing kits, such as the PRO-LAB® Test Kits are merely settling plates marketed by Pro-Labs® and sold through Home Depot® and other retail outlets.
The IAQ Pro 5-Minute Home Mold Test, and similar DIY mould test products are NOT capable of determining the significance of the presence of the molds. These devices are entirely and completely incapable of producing any legitimate results under all circumstances and cannot be interpreted by anyone under any known conditions.

The public is generally mislead by the use of popular indices that claim to provide a moldiness index. Some of the more popular (and most misleading) are the US EPA “Environmental Relative Moldiness Index (ERMI)” and the EMLab P&K MoldScoreTM. These kinds of indices and scores have been grossly misapplied and have been used by poorly trained “mould inspectors” as some kind of a magical score to evaluate mouldiness.

A study that appeared in the January 2015 edition of the Journal of Occupational and Environmental Hygiene (1) looked at the ERMI scores and attempted to determine if the ERMI correlated with health problems, such as “wheeze” in homes. What the authors found was that there was no statistically significant difference in ERMI scores in homes of children with wheeze, and children without wheeze.

In fact a primary finding of the 2015 study was that one could perform a visual inspection of the property and determine if the ERMI score would be high or low. That is, a visual inspection is just as good as wasting one’s money on suspect protocols such as ERMI.

In fact, virtually all the claims surrounding the application of the ERMI score and the MoldScoreTM as being capable of identifying a problem are false (and always have been false). Neither index is accepted by science, and the problem of misapplying the US EPA ERMI score became such a problem, that in August 2013 the US EPA released a report (2) to address the misapplication and even the fraudulent misrepresentations being made about ERMI.

On January 2, 2014, FACTs did an internet search on companies offering the ERMI protocol, and every organization, without a single exception, that we found on the internet that was offering the protocol, falsely described the protocol and misrepresented the service and the ERMI protocol.
According to the US EPA:

The EPA readily acknowledged that MSQPCR [Mold Specific Quantitative Polymerase Chain Reaction] and ERMI have not been validated or peer reviewed by EPA for public use. The agency considers MSQPCR and ERMI to be research tools not intended for public use. However, the manner in which one active and one inactive licensee advertised MSQPCR and ERMI has the potential to mislead the public into thinking that these research tools are EPA-approved methods for evaluating indoor mold. Also, information appearing on an EPA Office of Science Policy webpage suggests that the EPA has validated and endorsed MSQPCR for public use. The EPA has developed but has not finalized a fact sheet on MSQPCR, ERMI and indoor mold for the public.

Consequently, there is a risk that the public may make inappropriate decisions or take unnecessary actions regarding indoor mold on the belief that MSQPCR and ERMI results were based on research tools fully validated and endorsed by the EPA for public use.

In general, because the protocols sound “scientific” and because poorly trained field practitioners (almost exclusively “certified mould inspectors”) were fraudulently claiming the method was an EPA standard or a EPA validated method, the public continues to be duped by charlatans offering the ERMI service.

Currently, NONE of the mould related indices or scores are capable of determining if a property has a mould problem.

We have addressed these issues in detail and you can read them by clicking here: Mould testing - Benefit or Snake Oil?

References

December 1, 2014 Reply by James Whelan:

James Whelan 2nd
General Manager at Alexeter Technologies

As the President of Alexeter Technologies, manufacturer of the IAQ Pro 5-Minute Mold Test (as well as the consumer version of the product marketed under the Healthful Home brand), I would like to address misstatements and "assumptions" offered up by Caoimhín. His assertion that our test is “meaningless” indicates that he likely hasn't taken the time to either actually evaluate our product or possibly he misplaced our instructions-for-use after opening the package. A little background is in order. Our company has been developing, marketing and selling biological threat detection kits since 1999, when we first offered our detection kits for Bacillus anthracis to local Hazardous Material handling teams throughout the U.S. Since that time we have sold our products in over 45 countries worldwide and consider our technology to not only having been proven but validated by numerous municipal, state and national governments. The detection technology offered in our kits, lateral flow immunoassay, has been employed for over 30 years in medical and environmental testing and remains one of the most reliable and robust methods for biological identification in existence. Alexeter first offered test kits for fungal targets in 2007 as a natural outgrowth of our technology and expertise. We have licensed the reagents for one of our tests from the U.S Public Health Service and pay them a royalty on every test we sell. Interestingly, the patent licensed from the US PHS specifically notes “antibodies may be used in a variety of methods, such as detecting the presence of fungal fragments in the environment...”, so Caoimhín may wish to take up the issue of utility with the US Patent office or the US PHS. Nonetheless, I am happy to dismiss Caoimhin’s comments as simple ignorance as he only has to read our instructions-for-use. Our product makes no claim to the significance of detecting fungal antigens in the environment other than that it is an indication that more investigation may be warranted. The real utility of the product is that many consumers are either hesitant or unable to commit to the cost of a professional home evaluation. Our test kit provides a much better technical option to a settling plate and often results in a consumer making the commitment to a professional inspection once they are more convinced they have a likely issue. Our product retails at $44.99 online and includes a broad-based rapid test for Aspergillus/Penicillium species and a more specific test for Stachybotrys species. I do not know the standard fee that Mr. Connell charges to evaluate a residence or business but I suspect it is significantly more than our cost. The limit of detection for our tests is approximately 1200 spores/ml and we recommend testing either suspected mold areas or accumulated dust in areas of concern. In contrast to Mr. Connell’s assertion, mold is NOT present everywhere at these levels. A positive result on our tests is an indication that spore levels are higher than what would be considered normal for most environments, but levels than can easily be present in areas with active mold growth. We set the levels based upon actual results in the field and we continue to adjust the levels as warranted. We actually decreased our sensitivity by an order of magnitude a few years back so that our tests do NOT give positive results at spore levels often found in the natural environment. Of course, all field results are subject to caveats and our product is no different. It might be helpful to share our recommendations from our product instructions pertaining to the interpretation of results. It follows on my subsequent post.

December 3, 2014 Response to Mr. Whelan:

Hello Mr. Whelan –

Allow me to address the many misleading and factually incorrect statements made in the literature put out by your company.

The majority of your reply is entirely irrelevant to the question at hand and appears to be merely a canned sales pitch for your product which is virtually completely useless for determining if someone has a mould problem in their home or anywhere else.
But let's look at some of the misleading and false statements made by your company –

- Accurate and Safe! Detects over 32 unhealthy mold species...including Stachybotrys chartarum

You product merely detects the presence of moulds on surfaces – Your product is ENTIRELY incapable of quantifying or characterizing that presence. Can you please provide just one peer reviewed journal article that would support your contention that Stachybotrys chartarum has ever been demonstrated to be unhealthy on settled surfaces? You cannot, Mr. Whelan, because your company’s statement is entirely misleading. Tell us, what are the “unhealthy mold species”?

- Detects the worst mold types, like Stachybotrys, that are missed by air sampling

This is just a completely false statement. This is directly from your company literature. This is a lie, Mr. Whelan that your company cannot support. Your argument that Stachybotrys and “the worst mold types” are missed by air sampling is merely a lie. Your company cannot support this false advertising statement.

Now, let’s discuss “the worst types of mold.” Would you like to identify those for us, Mr. Whelan? You cannot, because there is no such thing. You company just made that up as a load of fluff.

Your company says: “Uses EPA-recommended dust samples instead of inaccurate air samples.” Really? Fascinating, information – Could you please provide us with the references to the EPA recommended dust sampling protocol to which you allude? You cannot, Mr. Whelan because they don’t exist – your company just made that up.

“Our product retails at $44.99 online and includes a broad-based rapid test for Aspergillus/Penicillium species and a more specific test for Stachybotrys species. I do not know the standard fee that Mr. Connell charges to evaluate a residence or business but I suspect it is significantly more than our cost.”

This is not just a lie, Mr. Whelan, it is predicated on a false assertion that your product is even capable of evaluating a residence or business. You product is completely, utterly, and unequivocally incapable of evaluating a residence or a business. Having said that, my fees for identifying a particular growth have been significantly lower than the $44.99 rip-off charged by your company – Very often, folks will send us photographs of their concern areas and we will identify the organism for FREE.

“The limit of detection for our tests is approximately 1200 spores/ml and we recommend testing either suspected mold areas or accumulated dust in areas of concern. In contrast to Mr. Connell’s assertion, mold is NOT present everywhere at these levels.”

This statement is a lie, Mr. Whelan, and you cannot support your argument. Your limit of detection is 1,200 spores/ml... OK... for a start, that number is entirely untranslatable in any manner that is germane to evaluating the significance of the presence of mould in any structure. Alexeter Technologies may be capable of bamboozling poor frightened Mrs. American Housewife with that number, but to scientists, we know that number is ENTIRELY meaningless in the context of valuating the presence of moulds. 1,200 spores per milliliter of WHAT? How
can you possibly translate an expression of concentration per unit volume to a flat surface? You can’t Mr. Whelan – it is snake oil, and in my opinion, you are a snake oil salesman.

“A positive result on our tests is an indication that spore levels are higher than what would be considered normal for most environments, …”

This is an utterly false statement that you just invented, and one that you are entirely incapable of supporting. For a start, your company would be entirely incapable of even defining “normal.”

So let me just underscore some pertinent objective facts –

1) The IAQ Pro 5-Minute Mold Test is utterly, unequivocally, incapable of quantifying the presence of mould in a home.

2) The IAQ Pro 5-Minute Mold Test is utterly, unequivocally, incapable of quantifying one’s exposure to mould.

3) The IAQ Pro 5-Minute Mold Test is utterly, unequivocally, incapable of evaluating the significance of the mould in any structure.

4) The IAQ Pro 5-Minute Mold Test is utterly, unequivocally, incapable of determining the significance of water damage.

5) The IAQ Pro 5-Minute Mold Test is results are entirely, utterly meaningless in the context of determining if a home or business has a mould problem.

6) Alexeter Technologies makes false statements in their company literature that cannot be supported by objective facts.

I hope that clear up a few issues on the matter.

Caoimhín P. Connell
Forensic Industrial Hygienist
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(The opinions expressed here are exclusively my personal opinions and do not necessarily reflect my professional opinion, opinion of my employer, agency, peers, or professional affiliates. The above post is for information only and does not reflect professional advice and is not intended to supercede the professional advice of others.)