Change THE AIR FOUNDATION

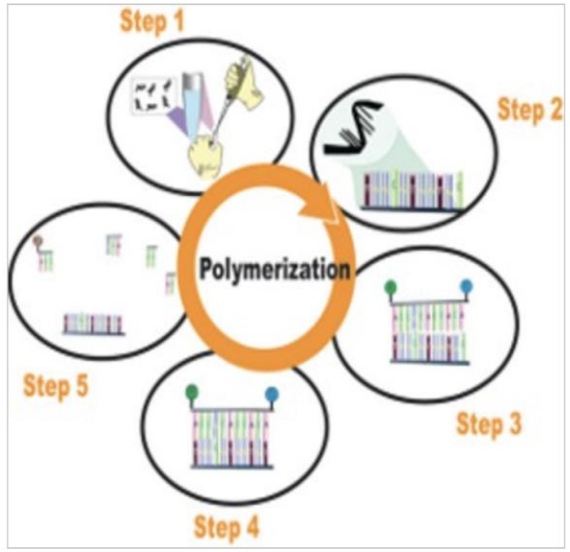
Testing 101

EPA 36 (MSQPCR) Sampling

WHAT WE WILL COVER TODAY

- DNA BASED MSQPCR TESTING
- WHAT DOES THE EPA 36 TEST?
- WHEN TO USE EPA 36
- WHERE TO COLLECT
- STRENGTHS
- LIMITATIONS
- READING AN EPA 36 REPORT

DNA BASED MSQPCR TESTING



- MSQPCR is an acronym for Mold Specific Quantitative Polymerase Chain Reaction.
- An ACCURATE and SENSITIVE DNA-based analytical method that identifies molds to the species level.
- It also enables us to identify the concentration levels of the species identified.
- EPA 36 is an example of MSQPCR testing.

WHAT DOES THE EPA 36 TEST

- 36 molds:
  - Group 1 --> 26 molds related to water damage.
  - Group 2 --> 10 molds typically found outdoor.
- It tests a specific area or an item using:
  - A swab.
  - A dust cassette.
- It does not provide an ERMI score.

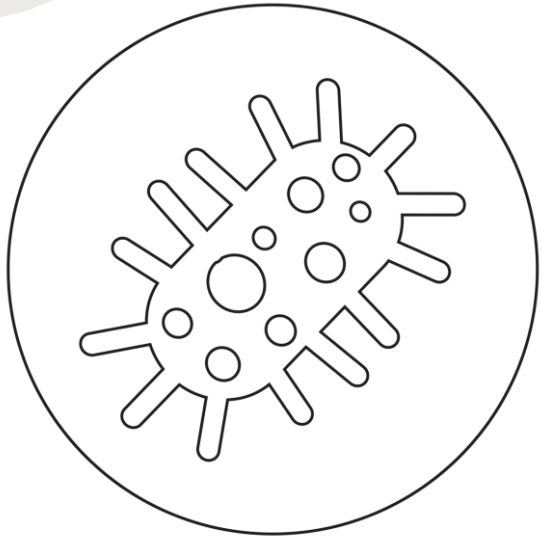
WHEN TO USE AN EPA 36

- To identify mold at a species level on specific items.
- Health related issues.
- To validate:
  - If mold is present.
  - What are you being exposed to.
  - If there are indicator molds for water damage.
- Post remediation verification testing.
- Legal cases to look at the complete picture of an impacted environment.

WHERE TO COLLECT EPA 36 SAMPLES

- Ventilation systems
- Mattress
- Couch
- Rugs
- A section of wood framing in the attic or crawlspace
- Coffee maker

STRENGTHS



- DNA formatting provides the most sensitive form for detection.
- Accurate detection of mold and species.
- Can be expedited for quick turnaround.
- DNA lab formatting takes away concern of overloading samples so results are not overshadowed by dominate molds.
- Identifies source areas of mold contamination.
- To verify if remediation was properly performed.

LIMITATIONS

- More expensive sampling method.
- Prohibitors such as drywall dust, rust and chemicals can corrupt results.

READING AN EPA 36

- Uses a panel of 36 molds separated into 2 groups:
  - Group 1 --> contains 26 molds related to water damage
    Group 2 --> contains 10 molds typically found outdoors
- Group 1 molds: identify indicator molds for water damage.
  - Look at the concentration levels for each molds/species detected for dominate molds in the environment
  - Look at the mold species and their capabilities to produce mycotoxins
- Group 2 molds: typically outdoor molds BUT look for mold/species concentration levels.
  - Higher levels are indicative of growth indoors

Lab Sample Number	2012-1	-	-	-
Client Sample ID	SA5336	-	-	-
Sample Location	Attic (Framing/Decking)	-	-	-
Sample size	2Swab	-	-	-
EPA 36 Species Group -1	Spores E./Swab	Spores E./Swab	Spores E./Swab	Spores E./Swab
Aspergillus flavus	2,032	-	-	-
Aspergillus fumigatus	3,489,585	-	-	-
Aspergillus niger	109,015	-	-	-
Aspergillus ochraceus	186	-	-	-
Aspergillus penicillioides	ND	-	-	-
Aspergillus restrictus	ND	-	-	-
Aspergillus sclerotiorum	ND	-	-	-
Aspergillus sydowii	ND	-	-	-
Aspergillus unguis	54	-	-	-
Aspergillus versicolor	ND	-	-	-
Eurotium (A.) amstelodami	62	-	-	-
Aureobasidium pullulans	2	-	-	-
Chaetomium globosum	87	-	-	-
Cladosporium sphaerospermum	ND	-	-	-
Paecilomyces variotii	783	-	-	-
Penicillium brevicompactum	65	-	-	-
Penicillium corylophilum	ND	-	-	-
Penicillium crustosum (group2)	ND	-	-	-
Penicillium purpurogenum	15	-	-	-
Penicillium spinulosum	264	-	-	-
Penicillium variabile	25	-	-	-
Scopulariopsis brevicaulis	4	-	-	-
Scopulariopsis chartarum	602	-	-	-
Stachybotrys chartarum	416	-	-	-
Trichoderma viride	ND	-	-	-
Wallemia sebi	6	-	-	-
I-Total Spores Detected	3,603,203			

Lab Sample Number	2012-1	-	-	-
Client Sample ID	SA5336	-	-	-
Sample Location	Attic (Framing/Decking)	-	-	-
Sample size	2Swab	-	-	-
EPA 36 Species Group -2	Spores E./Swab	Spores E./Swab	Spores E./Swab	Spores E./Swab
Acremonium strictum	ND	-	-	-
Alternaria alternata	19	-	-	-
Aspergillus ustus	54	-	-	-
Cladosporium cladosporioides I	397	-	-	-
Cladosporium cladosporioides II	13	-	-	-
Cladosporium herbarum	26	-	-	-
Epicoccum nigrum	1	-	-	-
Mucor and Rhizopus group	3,685	-	-	-
Penicillium chrysogenum	47	-	-	-
Rhizopus stolonifer	29	-	-	-
II-Total Spores Detected	4,270			

Notes: ND=None detected; the result is below the analytical detection limit or not present.

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