

ERMI Sampling for PCR Testing

Environmental Moldiness Index (ERMI) Sampling

Objective

- To determine the indoor mold burden of homes with Mold Specific Quantitative PCR from a dust sample.

Advantages and Disadvantages

- **Advantages**
 - Describes the mold burden of a home with a single numeric number that can be compared to a national database.
 - Only one dust sample is required to determine the mold burden in a home.
 - Standardized protocols for sampling and analysis.
- **Disadvantages**
 - Disadvantages of "grab sample" from short term air sampling are avoided by using dust samples.

Equipment

- DustChek™ or Mitest™ sampler and standard household vacuum cleaner.

Sampling

- General instructions: Dust samples are collected by vacuuming approx. 2 m² in the living room and 2 m² in a bedroom for 5 minutes each with a Mitest™ or DustChek™ sampler-fitted vacuum directly adjacent to the sofa or bed, respectively.
- Detailed step-by-step instructions:
- Remove the top and bottom caps and set aside, retaining for later use. Check to make sure the cassette contains the collection filter.
- Insert the hose attachment of the vacuum into the broader, wide end of the cassette.
- Mark the sampling area: 2 m² in the living room directly adjacent to the sofa and 2 m² in a bedroom next to the bed.
- Start the vacuum. Start the stopwatch. Place the sampler in one corner of the marked sampling area, and begin to collect dust from the area by placing the narrow, oval-shaped end of the DustChek™ (or Mitest™ sampler) in contact with the sampling surface.
- Slightly tilt the sampler to one side to allow a slight gap between the sampling surface and the sampler. (A sampler that is allowed to remain flush against the sampling surface will decrease vacuum efficiency by restricting airflow and will prevent sample uptake).
- Slowly sweep the sampling area from one end to the other using overlapping passes, adjusting the rate until the entire 2 m² area is covered over the course of the five minute sampling period.
- Turn off the vacuum. To prevent loss of material, tilt the cassette nozzle upward before turning off the vacuum.
- Remove the DustChek™ (or Mitest™ sampler) from the hose and visually inspect it to verify it contains enough sample. The sampler should contain 30 – 100 mg dust. If more dust needs to be collected, repeat previous steps.

- Replace the caps onto the cassette ends and place the cassette directly into Ziploc™ type bag. Do not tap the DustChek™ (or Mitest™ sampler) as the micro-fine dust is needed for analysis. Label the sample appropriately and record the sample description on the Chain of Custody form.

Shipping

- Cassettes with dust should be shipped to the laboratory for overnight delivery. If samples are stored before analysis, precautions should be taken so additional mold growth in the sample is avoided.

Reporting

- ERMI results are reported listing detection and quantities (in spore equivalents per mg) of Group 1 and Group 2 molds. The report also includes the numeric index number (ERMI) that can be compared to the national database.