

**Illinois Department of
Public
Health**

John R. Lumpkin, M.D., M.P.H., Director

2125 South First Street • Champaign, Illinois 61820-7499

March 28, 1997

#612059601

CHAMPAIGN COUNTY (MAHOMET) - Bioaerosol Sampling

Mr. Lee Jessup, Principal
Lincoln Trail Elementary
102 E. State, Box 200
Mahomet, Illinois 61853

Dear Mr. Jessup:

The Illinois Department of Public Health (IDPH) conducted fungi (mold) air sampling on February 1997. Seven air samples (including two samples in the [REDACTED] home) were collected for fungi using an Andersen Single-Stage Viable Particle Sampler. The IDPH routinely samples complaint areas, non-complaint areas, and outside ambient air to evaluate if bioaerosols are a factor in an indoor air quality problem. Bioaerosol characterization is complex with respect to size and nature of the individual components. Results are reported as total colony forming units (CFUs) which indicates the total number of aerobic particles per unit volume of air. The organisms were speciated or identified and comparisons were made to the outdoor air samples to help determine if the source is indoors.

The results of the bioaerosol air sampling are shown in Table 1. All fungi contain allergens and antigens that may induce asthma and/or hypersensitivity pneumonitis, and most contain or produce toxins. Even dead fungal spores can still be allergenic. Because fungal spores can be airborne, and come indoors through doors, windows or cracks, ventilation systems and crevices, indoor environments are never entirely free of fungi. In "healthy" buildings the number of colony forming units (CFU) and mix of fungi species tend to be similar to the outdoor environment. The bioaerosol air sample results indicate there is not a significant difference in the type of organisms and percentages found in the outdoor air sample than those collected from the inside of the school building and house. Also, the total fungi were low. The highest counts were found outside and in the basement of the house. There is no universally acceptable numerical standard or guideline to use when analyzing bioaerosol results for health concern. The guideline most often used is the following: indoor concentrations divided by the outdoor concentrations should be less than one, and if the species are similar, adverse health effects would not be anticipated in the normal population. That guideline was used in the evaluation of the results for this investigation and no significant health effects would be expected to be caused from the bioaerosols found during the sampling. Low levels of fungi are expected during the winter (dry) months.

Page 2

Mr. Lee Jessup, Principal
Lincoln Trail Elementary

At this time, no additional air sampling is warranted. If you have any questions regarding this evaluation, please contact Cary Ware or me at our Champaign Regional Office located at 2125 South First Street, Champaign, Illinois 61820, telephone (217) 333-6914.

Very truly yours,



Mark Kuechler, P.E.
Regional Engineer

CW:kgb ^P
Enclosure


cc: Champaign Regional Office ^{cw}
Division of Environmental Health ✓
John Alumbaugh, Superintendent


TABLE 1
BIOAEROSOL SAMPLING RESULTS
February 11, 1997

Areas	Fungi (CFU/M ³)
Outdoors	33.3 Cladosporium herbareum
Lincoln Elementary	16.7 Yeast 16.7 Penicillium chrsyogenum
Lincoln Elementary 5E	16.7 Yeast 16.7 Moniliella
Lincoln Elementary 5F	16.7 Cladosporium herbareum 16.7 Yeast 16.7 Unknown
Lincoln Elementary 5B	16.7 Cladosporium herbareum 16.7 Eurotium Aspergillus glaucus
Lincoln Elementary Computer Room	None
████████ Bedroom	None
████████ Basement	33.3 Trichoderma 16.7 Cladosporium herbareum 16.7 Botrytis

CFU/M³ - Colony Forming Units Per Cubic Meter