

UNIVERSITI TEKNOLOGI MARA

**CONTAMINATION OF FUNGI AND
SICK BUILDING SYNDROME IN
UNIVERSITY EDUCATIONAL
ROOMS**

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Project submitted in fulfillment of the requirements for
the degree of

**Bachelor in Environmental Health and Safety
(Hons.)**

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DECLARATION BY STUDENT

Project entitled “Contamination of Fungi and Sick Building Syndrome in University Educational Rooms” is a presentation of my original research work. Whenever contributions of others are involved, every effort is made to indicate this clearly, with due reference to literature, and acknowledgement of collaborative research and discussions. The project was done under the guidance of Project Supervisor, Dr. Farah Ayuni Bt Shafie. It has been submitted to the Faculty of Health Sciences in partial fulfilment of the requirement for the Degree of Bachelor in Environmental Health and Safety (Hons).

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In the name of Allah, The Most Gracious, The Most Merciful.

Assalamualaikum and Alhamdulillah, all praise to Allah S.W.T The Supreme Lord of the Universe. Peace and blessing to Nabi Muhammad S.A.W., all prophets and their families. I praise Allah S.W.T. for the strength and His blessings in completing my study.

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ABSTRACT

Educational rooms in education institution that are served with mechanical ventilation and air conditioning (MVAC) can be contaminated with bioaerosols such as fungi. The growths of fungi are influenced by indoor temperature and relative humidity if the MVAC fails to function efficiently. The presence and contamination of fungi inside the indoor environment can lead to deterioration of health and comfort of the occupants inside the building and also known as sick building syndromes(SBS). This study is comparative cross sectional study where the study is conducted at FSK 6 lecture rooms and FSK 7 lecture halls. The air samples of fungi are collected by using Merck Milipore Air Tester with Potato Dextrose Agar (PDA) agar while the physical parameters (i)temperature and (ii)relative humidity are measured using TSI Q-Trak. The symptoms of SBS are assessed using close-ended questionnaires adopted from Industrial Code of Practise on Indoor Air Quality 2010. FSK 6 lecture rooms shows the highest mean of relative humidity and total colony count of fungi that are 74.53% and 1103.97 cfu/m³ respectively. The mean of relative humidity and total colony count of fungi shows significant result with both of them have p value of ($p=0.001$). There is also strong correlation and significant p value of relative humidity with total colony count of fungi of both FSK 6 lecture rooms and FSK 7 lecture halls ($r=0.878$, $p=0.001$) and ($r=0.908$, $p=0.001$). There is no statistical significant value between total colony count of fungi and SBS symptoms. Relative humidity is the factor that influences the concentration of total colony count of fungi in educational rooms but the concentration of total colony count of fungi does not have correlation to SBS symptoms.

Keyword: *Relative humidity, Temperature, Total colony count of fungi, Sick building syndrome.*