

**UNIVERSITI TEKNOLOGI MARA**

**ASSESSMENT OF TOTAL VOLATILE  
ORGANIC COMPOUND (TVOC) IN  
THE KITCHEN FOR EDUCATIONAL  
SETTING**

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Project submitted in fulfilment of the requirements for  
the degree of  
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(Hons.)**

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## DECLARATION BY STUDENT

Project entitled “Assessment of Total Volatile Organic Compound (TVOC) in the Kitchen for Educational Setting” 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, Mr. Razi Ikhwan Bin Md Rashid. 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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Praise be to Allah the Almighty and Merciful, who has given me an enormous miracle in every struggle, so that I can finish my thesis entitled ***“ASSESSMENT OF TOTAL VOLATILE ORGANIC COMPOUND (TVOC) IN THE KITCHEN FOR EDUCATIONAL SETTING”***. Peace be upon the prophet Muhammad S.A.W who has brought the Islamic norms and values to the entire world.

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## ABSTRACT

There are many risks that most people are not aware of especially when it comes to cooking activities which with the use of fire have become a part and parcel of life. Cooking activities have been identified as a main contributor to indoor air pollutants and Total Volatile Organic Compound (TVOC) is one of the major pollutants emitted from the cooking activities. Exposure to TVOC from cooking emissions may harm humans as materials attached to the surface of skin particles will be absorbed into the human body and can induce a range of adverse human health effects. In this study, TVOC emitted from two types of kitchens which were culinary and pastry as an educational setting at Faculty of Hotel and Tourism Management in UITM Puncak Alam were measured. The results demonstrated that culinary kitchens gave the highest TVOC concentrations ( $.485 \pm 0.308$ ) compared to pastry kitchens ( $.296 \pm .196$ ), due to their different cooking methods. Meanwhile, for the stages of cooking indicated that during cooking activities recorded the highest TVOC concentration ( $.579 \pm .245$ ), followed by after cooking activities ( $.245 \pm .181$ ) and before cooking activities ( $.156 \pm .060$ ) mainly because of TVOC emission increase with the increasing of temperature. It was proved that cooking activities can contribute to the amount of TVOC emissions in the kitchens. However, TVOC concentration emitted from both of the kitchens were still within the standard limit established by Malaysian Industry Code of Practice (ICOP) and data from health risk assessment also demonstrated that concentration of TVOC in the kitchens do not impose any of health consequences to the students there.

*Keywords: Cooking activities, total volatile organic compound, educational setting, health risk assessment*