UNIVERSITI TEKNOLOGI MARA

PRESENCE OF HEAVY METAL IN READY TO EAT FOOD AND ITS POTENTIAL HEALTH RISK

NUR SYAHIRAH BINTI ZAWAWI

Project submitted in fulfillment of the requirements for the degree of **Bachelor in Environmental Health and Safety (Hons.)**

Faculty of Health Sciences

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DECLARATION BY STUDENT

Project entitled "Presence Of Heavy Metal In Ready To Eat Food And Its Potential Health Risk" 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, Encik Nasaruddin bin Abd Rahman. 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).

Student's signature:

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(Nur Syahirah Binti Zawawi)

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

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PRESENCE OF HEAVY METAL IN READY TO EAT FOOD AND ITS POTENTIAL HEALTH RISK

Nur Syahirah binti Zawawi, Nasaruddin bin Abd Rahman*

Department of Environmental Health and Safety, Faculty of Health Sciences, Universiti Teknologi MARA Selangor, Puncak Alam Campus, 42300 Selangor, Malaysia

Email address: nasa044@salam.uitm.edu.my

ABSTRACT

Objective: Various heavy metals present in the air from anthropogenic activities that polluting ready-to-eat foods. These metals has high toxicity and bioaccumulation tendency . This study aims to identify the presence of lead (Pb), cadmium (Cd) and aluminium (Al) in uncooked and cooked 'roti canai' sold adjacent to main road of FELDA Bukit Goh. **Methodology:** A cross-sectional study was carried out involving 40 samples (20 uncooked, 20 cooked) of 'roti canai' were taken at four restaurants located adjacent to the main road. Samples were taken to laboratory prior to analysis with Flame Atomic Absorptio Spectroscopy (FAAS). Independent t-test was conducted to analysed the mean difference between uncooked group and cooked group. **Result:** The mean concentration for uncooked 'roti canai' were 7.59 mg/kg, 1.77 mg/kg and 36.26 mg/kg for lead, cadmium and aluminium respectively. As for cooked 'roti canai', the mean concentration were 8.61 mg/kg, 1.74 mg/kg and 58.67 mg/kg for lead, cadmium and aluminium subsequently. **Conclusion:** Finding indicated that the mean concentration exceeded the permissible proportions as stipulated in Food Regulations 1985 and standards by WHO/FAO. The health risk assessment conducted showed that all of the value of Target Hazard Quotient (THQ) were below 1 except for lead in cooked samples. The value of Hazard Index were also more than one (uncooked=1.88, cooked=2.0) which indicates possible health risk associated from consuming too much 'roti canai'.

Keywords: *Heavy metal, FAAS, lead, cadmium, aluminium, ready-to-eat foods, FELDA Bukit Goh*