

UNIVERSITI TEKNOLOGI MARA

**CONCENTRATION AND POTENTIAL HEALTH RISK OF
HEAVY METALS IN MARKET VEGETABLES IN YAN,
KEDAH**

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

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Declaration by Student

Project entitled "Concentration And Potential Health Risk Of Heavy Metal In Market Vegetables In Yan, Kedah" is a presentation of my original research work. Wherever contributions of others are involved, every effort is made to indicate this clearly, with due reference to the literature, and acknowledgement of collaborative research and discussions. The project was done under the guidance of Mr. Ahmad Razali Bin Ishak as Project Supervisor and Ms. Siti Rohana Binti Md Yatim as Co-supervisor. It has been submitted to the Faculty of Health Sciences in partial fulfillment of the requirement for the Degree of Bachelor in Environmental Health and Safety (Hons).

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Abstract

A study of Concentration And Potential Health Risk Of Heavy Metals In Market Vegetables In Yan, Kedah

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This study was conducted to analyze the heavy metal concentration in selected vegetables in local market in Yan district. This study design is cross-sectional study

Recently matured green mustard, water spinach and chilli from four (4) different markets were sampled. The sample will analyzed for concentration plumbun, cadmium, zinc and copper using Atomic Absorption Spectrophotometer (AAS) to determine heavy metals. The mean concentration for each heavy metal in the sample gotten from each market and compared with permissible level set by the Malaysia Food Act 1983 and Food Regulation 1985. These result as Pb concentration in water spinach Local farm is 2.197 ± 0.013 , Sg. Limau Dalam is 2.193 ± 0.007 , Yan Besar is 0.73 ± 0.673 and Guar Chempedak is 1.537 ± 1.337 . For Pb concentration in chilli Local farm is 2.107 ± 0.007 , Sg. Limau Dalam is 123 ± 0.023 , Yan Besar is 2.143 ± 0.03 and Guar Chempedak is 2.143 ± 0.03 . These two type vegetable were exceeding permissible limit as give in Food Act 1983 and Food Regulation 1985. Zn and Cu concentration were found below permissible limit for selected vegetable in all four local fresh marketing Yan district.

Concentration and daily intake (EDI) of heavy metals (Pb,Cd,Zn,Cu) in local market vegetables in Yan district are investigated and their potential health risk for local consumers is simultaneously evaluated by calculating the health risk. From health risk assessment had done, all selected vegetables were safe to consume since daily intake for each individual were not exceeding the safety limit given by FAO/WHO for Pb and Cd.

Keywords: Heavy metal, estimate daily intake, selected vegetable, Malaysia Food Act 1983, permissible intake