UNIVERSITI TEKNOLOGI MARA

LEVEL OF HEAVY METALS DETECTION (CADMIUM & FERUM) IN *ANAS PLATYRHYNCHOS* AND ITS POTENTIAL HEALTH RISK TO HUMAN

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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 Level of Heavy Metals Detection (Cadmium & Ferum) in *Anas Platyrhynchos* and Its Potential Health Risk to Human 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. Mohd Izwan Masngut as Project Supervisor and Mr. Nasaruddin Abd Rahman 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

Level of Heavy Metals Detection (Cadmium & Ferum) in *Anas Platyrhynchos* and Its Potential Health Risk to Human

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A cross-sectional study on concentration of cadmium and iron in meat tissues were determined in male and female of White Pekin duck. Estimation of human consumption towards duck meat were determined through health risk assessment. Total of 36 White Pekin duck consisted of 18 males and 18 females were collected at the same site using stratified random sampling. The ducks collected were only involved aged range from 9 to 12 weeks and in healthy condition. The methods to detect the heavy metals were using Flame Atomic Absorption Spectrophotometer (FAAS). Total duck meat analyzed shows the mean concentration of cadmium is 0.025 mg/kg (SD: 0.028) while iron is at 8.673 mg/kg (SD: 1.722). The result of heavy metals concentration in duck meat were identified to be lower than maximum permitted proportion of metal contaminants in food. Determination of heavy metal level according to sex difference of the duck showed that there is no significance difference between heavy metal and sex of the duck (p-value > 0.05). Health risk assessment for exposure assessment has been calculated by comparing results on normal weight of malaysian adult. The value shows that duck meat were safe for consumption on human and estimated not to cause health risk to human. The safe level of heavy metals in duck meat is suggested due to unpolluted duck farm area with safe feeding method applied to the ducks.

Keywords: Anas Platyrhynchos, Cadmium, Heavy Metal, Health Risk Assesment, Iron.