

**ASSESSMENT OF CADMIUM (Cd) CONCENTRATION IN COCOA
BASED FOOD PRODUCTS AND ITS POTENTIAL
HEALTH RISK ON THE HUMAN HEALTH**

NURUL DIYANA HAMZAH

**BACHELOR OF SCIENCE (Hons.) BIOLOGY
FACULTY OF APPLIED SCIENCE
UNIVERSITI TEKNOLOGI MARA**

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ABSTRACT

ASSESSMENT ON CADMIUM (CD) CONCENTRATION IN COCOA BASED FOOD PRODUCTS AND ITS POTENTIAL HEALTH RISK ON THE HUMAN HEALTH

Cocoa based food products has been commercialized in the Malaysian industry and is widely consumed by various number of consumers ranging from different walks of life. This study was carried out to evaluate the concentration of heavy metal Cadmium in commercialized cocoa based products and asses the risk assessment in cocoa based food products. Students of Faculty of Applied Science were used as the sample population in this casestudy. The method that is being used in obtaining the concentration of heavy metal was the analysis using the Atomic Absorbance Spectrophotometer. To assess the Cadmium concentration, samples of cocoa based food products was analysed using the Atomic Absorbance Spectrophotometer model PG-990. Guided questionnaire was used in obtaining the consumption rate of chocolate based products. In assessing the risk on chocolate based products, Hazard Index and Hazard Quotient assessment were conducted. The result obtained show that the cocoa based product consumer, does not possess any risk of negative health impact since the Hazard Index value which is 9.656×10^{-9} which do not exceed the maximum value of 1.0.

CHAPTER 1

INTRODUCTION

1.1 Background of Study

A study were conducted by Sohaila and Husnain (2012) using Atomic Absorption Spectrophotometry (AAS) machine in assessing trace metals Lead (Pb), Cadmium (Cd), Nickel (Ni), Ferum (Fe), Copper (Cu), Zinc (Zn) and Manganese (Mn), set by different national and multinational companies of 32 usually consumed chocolate based products. The results showed that there is a presences of the listed trace metal. The findings were that, in cocoa powder and cocoa-based product, the mean concentrations of Pb, Cd, Ni and Fe were discover to be higher in than in milk and sugar-based chocolates. The chemical composition of cocoa allows strong binding of Pb and Cd thus the likelihood of the existence of Lead (Pb) and Cadmium (Cd) in chocolate is a problem of health concern. Sohaila and Husnain thus proposed a conclusion that exceeds in consumption on the consumption limit of cadmium and lead prescribed by the US can be prevented by reducing the number of intakes of the cocoa based chocolates and confectionaries.